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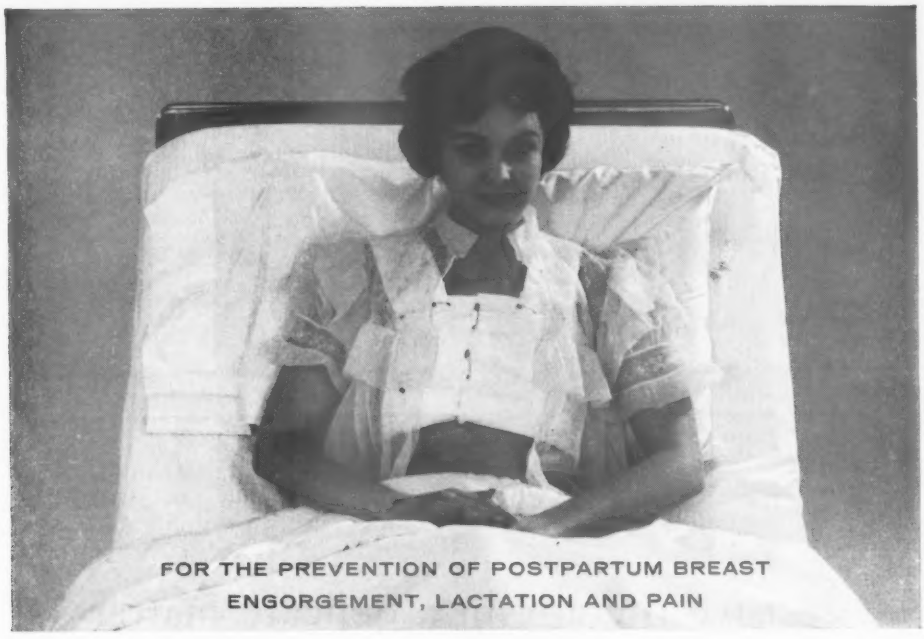

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1. Council on Drugs: New and Nonofficial Drugs 1958. Methallenestril, Philadelphia, J. B. Lippincott Company, 1958, pp. 477-478.

2. Schneeberg, N. G.; Perczek, L.; Nodine, J. H., and Perloff, W. H.: Methallenestril, a New Synthetic Estrogen, J.A.M.A. *161*:1062 (July 14) 1956.

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References: 1. J. J. McDonough and N. Mulla, to be published. 2. Reports on file, Roche Laboratories. 3. R. C. V. Robinson and L. E. Harmon, *Antibiotics Annual 1958-1959*, New York, Medical Encyclopedia, Inc., 1959.

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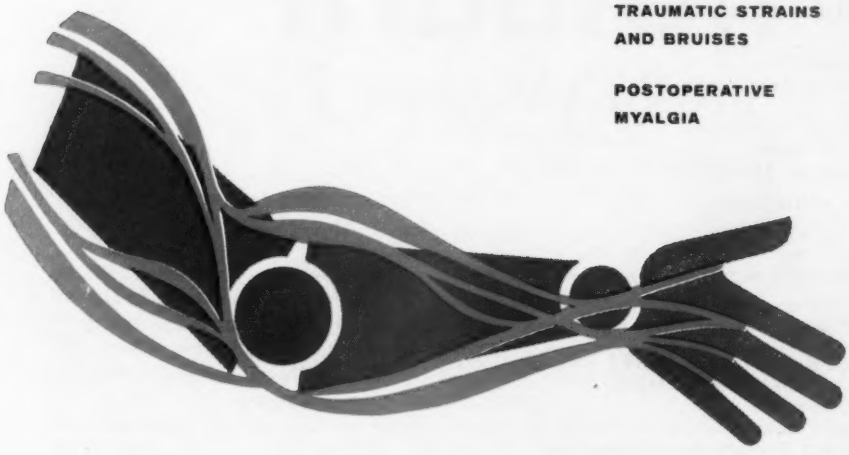

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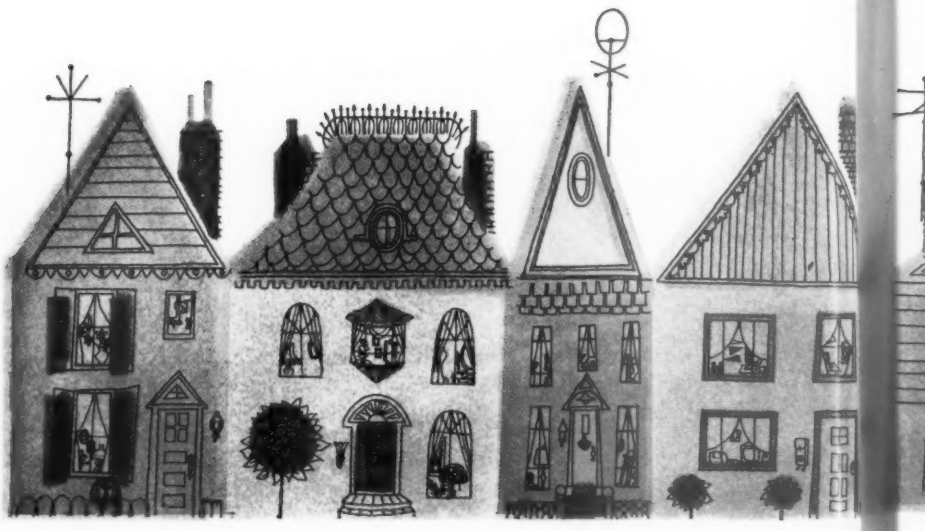

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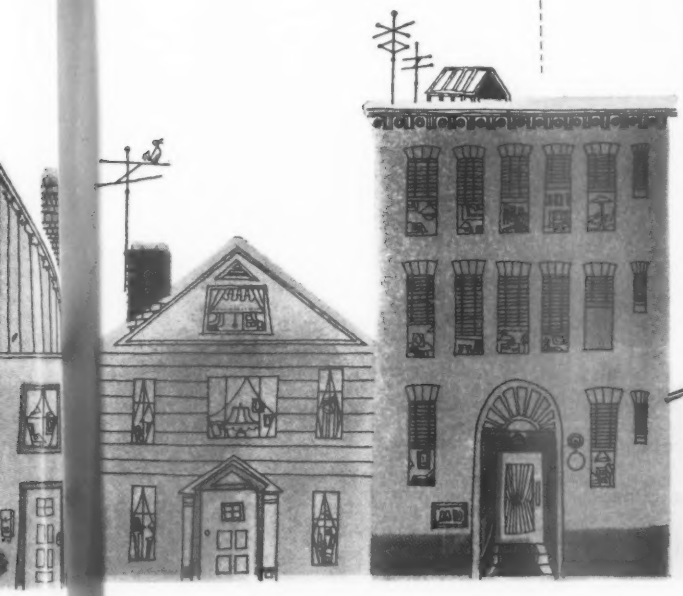

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1. Macy, I. G.; Kelly, H. J., and Sloan, R. E.; with the Consultation of the Committee on Maternal and Child Feeding of the Food and Nutrition Board, National Research Council: The Composition of Milks, National Academy of Sciences, National Research Council, Publication 254, Revised 1953. 2. Research Laboratories, Mead Johnson & Company.

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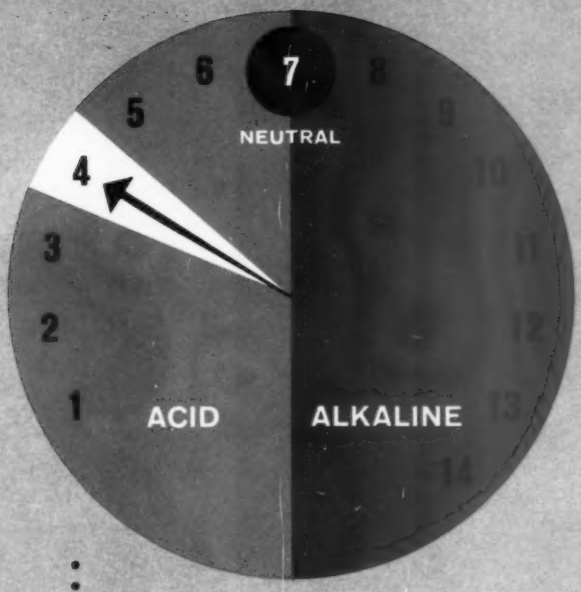

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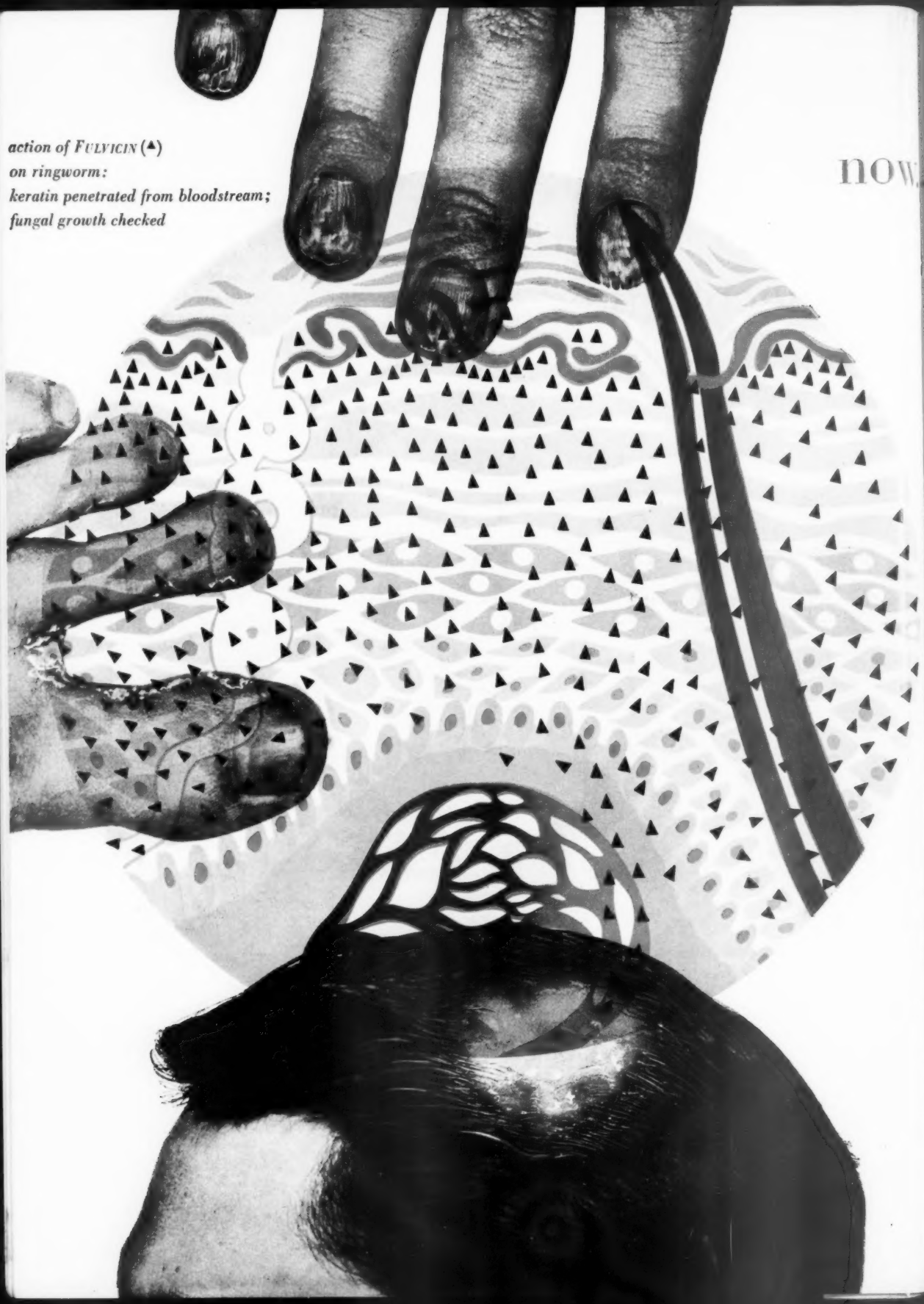
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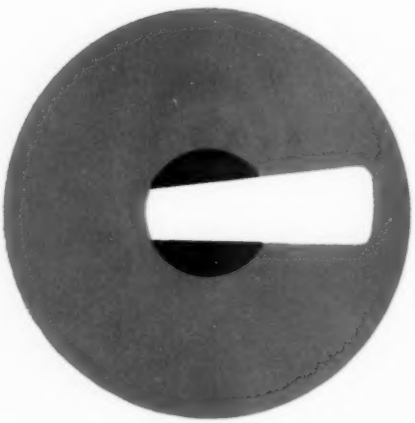

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Gilliotte, B. W.: Clin. Med. 6:223, 1959

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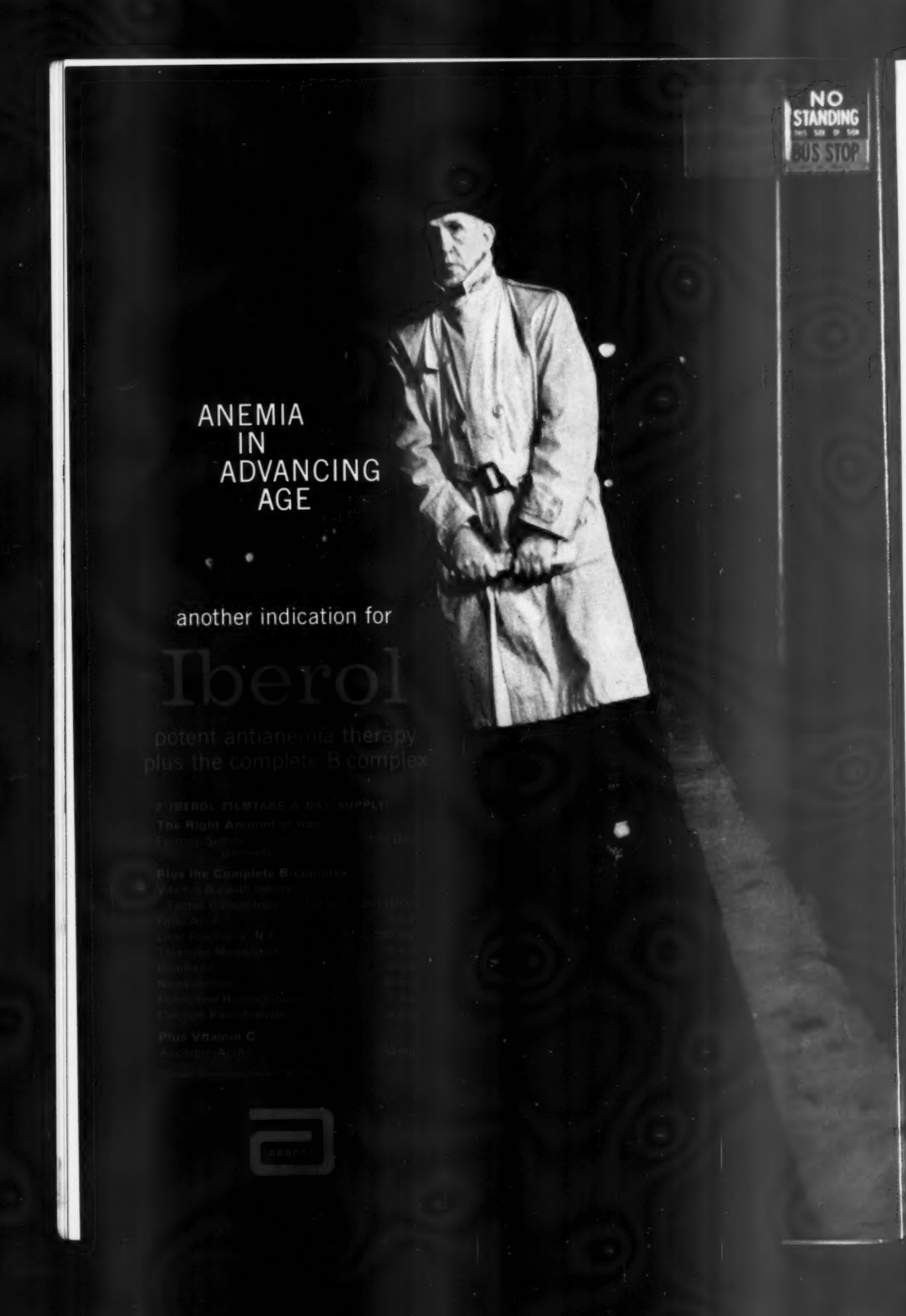
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(Continued on page 869)

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in everyday office practice

safely control the "target symptoms"
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smallest effective dosage (0.25 mg. b.i.d.)
of any neuroleptic* agent

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the premise

Emotional tension states, psychosomatic disorders and similar neuroses constitute a major portion of the clinical conditions seen today in everyday office practice. Whether the emotional stress is in the form of a behavioral disturbance characterized by anxiety, anxiety accompanying specific organic disorders or chronic conditions in which anxiety is a contributing factor, the aim in therapy is the same: to alleviate emotional stress and enable the patient to cope with life's problems more effectively and to live more comfortably.

The choice of an agent to overcome the patient's particular "target symptoms" of emotional stress, without impairing alertness or productivity, or producing undesirable reactions, is often a difficult and haphazard task. Yet, one may be guided by the fact that there is a correlation between the dosage of a phenothiazine derivative and the frequency and the type of side effects it causes, ***the less of the drug needed to achieve therapeutic results, the less likely are side effects.*** **Thus, the lower the effective dosage of a phenothiazine derivative, the lower the incidence of unwanted side reactions and, conversely, the higher the level of therapeutic response.**

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Extensive clinical studies have established important psychopharmacologic advantages for PERMITIL. The effective dosage of PERMITIL (*0.25 mg.* b.i.d.) is the lowest safe dosage of any anti-anxiety agent. Side effects associated with dosage not exceeding 1 mg. per day have been uncommon and transitory.

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PERMITIL has an inherently long duration of effect. This makes possible a particularly convenient and easy-to-remember schedule of morning and evening dosage.

The promise of PERMITIL in everyday office practice, then, is the more effective control of the "target symptoms" of emotional stress with the lowest safe dosage of any anti-anxiety agent.

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"The pharmacologic management of psychiatric disorders challenges the therapeutic acumen of the physician. He must choose a drug which will produce remission as quickly as possible with the least risk."[2] In this regard, PERMITIL represents an advance over its predecessors[2] because of its higher level of therapeutic response and low order of side reactions.

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References: 1. Freyhan, F. A.: Psychopharmacology Frontiers, Boston, Little, Brown and Co., 1959, p. 7. 2. Ayd, F. J.: The current status of major tranquilizers, in press.

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(Continued on page 871)

MEAL RESERVATIONS
AMERICAN MEDICAL WOMEN'S ASSOCIATION, INC.
1959 MIDYEAR MEETING

Arlington Hotel, Hot Springs National Park, Ark. *Nov. 12-16, 1959*

Friday, Nov. 13	Luncheon:	No. of reservations _____ at $3.50 each	$_____
	Buffet dinner:	No. of reservations _____ at $6.00 each	_____
Saturday, Nov. 14	Luncheon:	No. of reservations _____ at $3.75 each	_____
	Dinner:	No. of reservations _____ at $6.50 each	_____
Sunday, Nov. 15	Luncheon:	No. of reservations _____ at $3.50 each	_____
	Dinner:	No. of reservations _____ at $4.00 each	_____
		Total	$_____

Please make checks payable to the American Medical Women's Association
Mail to Lillian T. Majally, American Medical Women's Association, Hotel Arlington, Hot Springs, Ark.

Sight-seeing tour, *Friday, Nov. 13:* No. of reservations _____ at $2.20 each $_____
I prefer to play golf (green fee, $3.50, golf cart for two, $6.00) _____ ride horseback (riding $1.50 per hour) _____

Reservations for golf or riding must be made not later than 9 a.m. Friday at the AMWA reservation desk on the mezzanine floor.

Reservations are to be held in the name of _____
Address _____
(please print)

Monday, Nov. 16 (see AMWA program on page 916)
I expect to attend the Luncheon ____ yes ____ no
Tea ____ yes ____ no
Dinner ____ yes ____ no

Bus trip to Little Rock, luncheon, and tour of City $5.00
Please make advance reservations

American Medical Women's Association, Inc.

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(Continued on page 872)

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(Continued on page 928)

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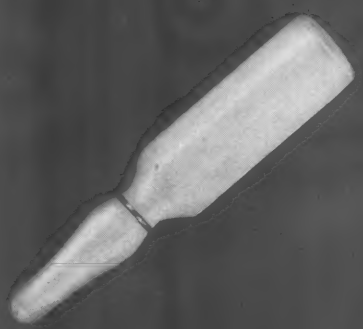

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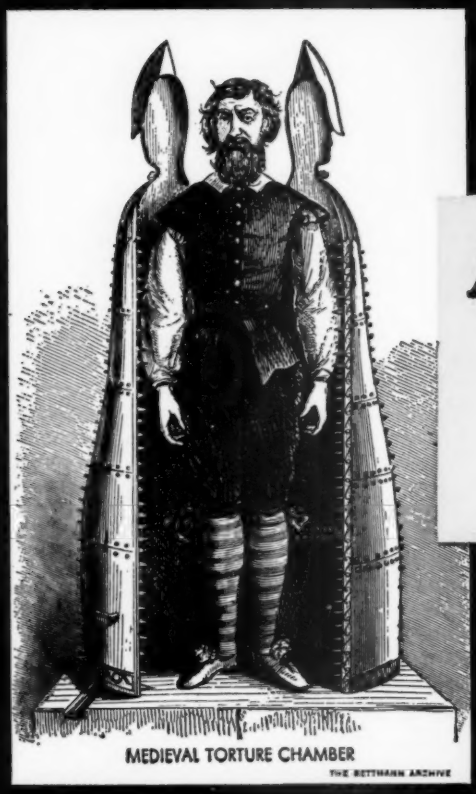

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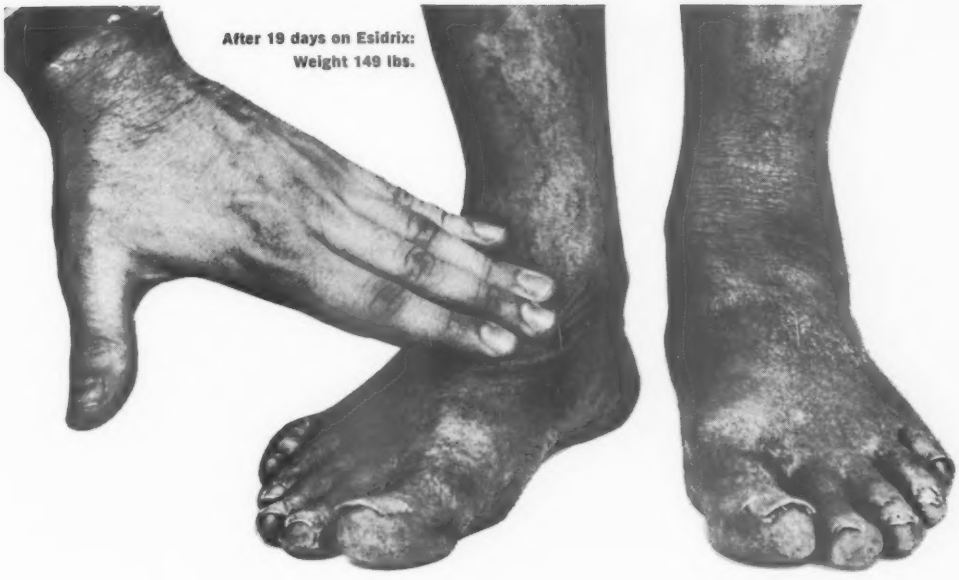

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H. K., 44 years old, was admitted to the hospital on 3/3/59 with complaints of *swollen abdomen, swelling of both legs and exertional dyspnea.* These symptoms had been intensifying over a three-week period. The patient's history included heavy drinking since the age of 18, and one prior admission to the hospital in 1954 with ascites and pedal edema. Diagnosis, at that time, was Laennec's cirrhosis, and the patient responded well to a regimen of diuretics, salt restriction and multivitamins. There was no recurrence up to that leading to his current admission.

Clinical findings worthy of note: Eyes — conjunctivae and sclerae slightly icteric. Chest—diaphragm elevated. Abdomen — girth enlarged, definite fluid wave. Liver palpated 4 fingerbreadths below the costal margin; no other palpable viscera. Extremities—pedal edema (4+).

The patient is well developed and not in acute distress. Blood pressure, 140/80 mm. Hg; pulse, 112/min.; respiration, 20/min. Impression: Laennec's cirrhosis—decompensated.

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*Hirsch, H. A., and Finland, M.: *New England J. Med.* 260:1099 (May 28) 1959.

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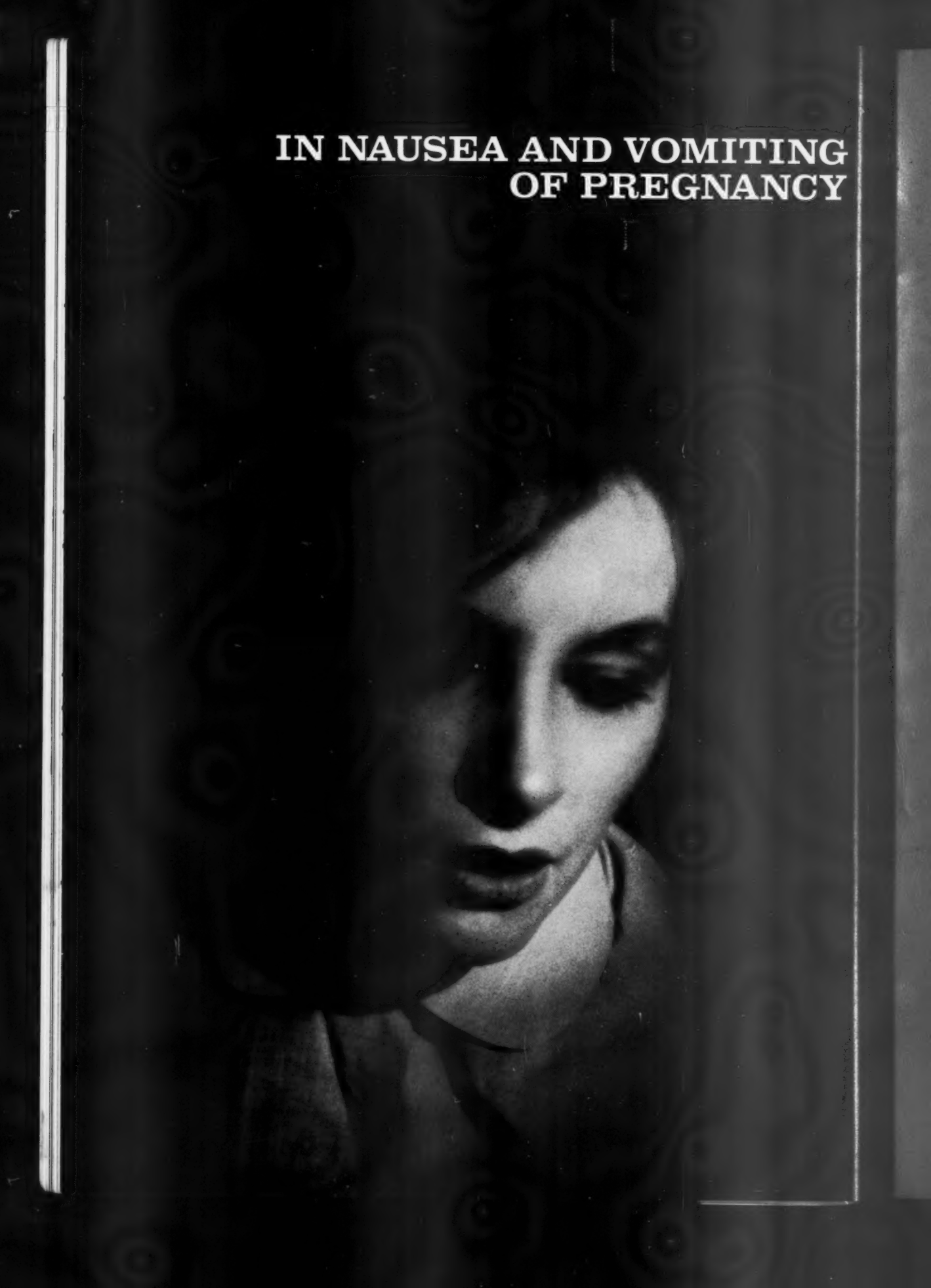

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Hydatid Disease

Carroll L. Birch, M.D., and Basil P. Anast, M.D.

HYDATID DISEASE IN MAN is caused by the larval forms of two small tapeworms, *Echinococcus granulosus* and *E. multilocularis*. Man is therefore an intermediate host. In the domestic cycle of *E. granulosus*, the usual intermediate hosts are sheep, hogs, and cattle and the definitive host is most commonly the dog. There is also a sylvatic cycle in which foxes and wolves are definitive hosts while deer and moose serve as intermediate hosts.

The adult worm of *E. granulosus* is small, 3 to 5 mm. in length, and consists of a scolex with four suckers and a rostellum with two rows of hooklets. The number of hooklets varies from 28 to 50, usually being 30 to 36. The scolex includes the head and narrow neck and is subtended by three proglottids—one immature, one mature, and one terminal gravid proglottid that may be as long as 2 mm. Within the gravid proglottid, practically filling it, is a uterus with lateral evaginations containing about 200 eggs. The terminal proglottid may rupture before or after it is detached from the strobila, liberating the eggs that are then discharged in the feces of the definitive hosts. The ova are indistinguishable from other *Taenia* ova, range in size from 30 to 38 μ, and have thick brown shells with radial striations which surround the onchospheres with their characteristic six embryonic hooklets.

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Man acquires this infection by ingesting the ova of *E. granulosus*. These ova hatch in the duodenum liberating the onchospheres, which penetrate the wall of the intestine. Most of the larva are filtered out in the liver but some pass on to the lungs and other organs. Many are destroyed by tissue reaction and phagocytosis. Most of those that are screened out in the liver survive. They are visualized early as spherical or irregular vesicles or cysts.

Three weeks after infection the cyst is about 0.25 mm. in diameter and in five months about 1 cm.; it continues to grow slowly. It produces no symptoms in the parenchyma of the liver, but causes symptoms and signs of a space-occupying tumor in other organs, depending on the location. When the cyst is in the liver, it may not become manifest for 20

years; sometimes it is discovered accidentally at autopsy. Because man lives for many years, the slow-growing liver cyst may cause symptoms.

A single hydatid cyst may become very large and is usually filled with clear fluid. The host reacts by forming a thick laminated layer around the cyst. This wall is lined by a parasitic germinative membrane that buds off scolices, a very primitive mode of reproduction. Some of the buds are lined by germinating epithelium that bud off scolices of their own, forming brood capsules. Many of the scolices and brood capsules break from the lining membrane and float in the cyst fluid, forming the so-called hydatid sand. The hydatid fluid that fills the cyst gradually increases, causing considerable distention. This type of development is called endogenous and results in a single cyst, the most common type of hydatid disease caused by *E. granulosus*. It is from this type of cyst that the hydatid thrill may be elicited by placing a stethoscope firmly but gently on the tumor and flicking it with light staccato percusson. A vibrating resonance is heard and prolonged for a short time after the percussion has ceased.

A second type of development in *E. granulosus* cyst is called exogenous. Here the budding is outward, beginning in the germinal layer and protruding through the laminated wall. In most cases exogenous budding is caused by traumatic rupture of the cyst wall or an increase in fluid pressure within the cyst.

The parasitic cycle is completed when a dog or other definitive host ingests the hydatid cyst from an intermediate host. Each scolex after ingestion is capable of developing into an adult tapeworm. The scolex evaginates and attaches to the mucosa of the small intestine and produces proglottids. With the development of gravid proglottids, ova appear in the stool.

The common intermediate hosts for the domestic cycle of *E. granulosus* are sheep, hogs, cattle, and, rarely, man. The larval stage has very little host specificity. These intermediate hosts vary in their ability to transmit the disease as some produce sterile cysts. In sheep only 8 per cent of the cysts are sterile, making the sheep a favorable intermediate host. In cattle 90 per cent are sterile, making cattle poor intermediate hosts from the standpoint of propagation of the parasite.[1] In short-lived domestic animals the hydatid cysts produce few or no symptoms. Usually cysts are discovered after the animals are slaughtered. Also, this parasite causes little or no trouble in the definitive hosts even though the worms may be present in large numbers.

In man hydatid cysts may cause no symptoms, especially if they are located in the parenchyma of the liver. Later, calcium is deposited in the cyst walls, making them visualizable by roentgenography. In vital areas, however, even small cysts may cause serious trouble. Most hydatid cysts make their presence known by pressure on the tissues in which they are growing. These symptoms vary according to the location of the cysts. Then, too, the tumor might, by pressure on a blood vessel, cut off the blood supply and cause ischemia with its consequences. Near the hilus of the liver a small cyst may occlude the bile passages and cause jaundice. Pressure symptoms are caused chifly by calcified cysts. Many unilocular cysts may reach a great size and contain 10 to 15 qt. or more of hydatid fluid. Growth continues in spite of the laminated fibrous capsule laid down by the host. The wall may be so stretched by pressure from within that it bulges at the point of least resistance. This bulge may be pinched off and form a secondary independent cyst. If the hydatid is growing in resistant tissue like bone, it may burrow along the line of least resistance and infiltrate rather than form a rounded cyst. It may errode bone and fill the marrow cavity. A complete cyst wall is not found in hydatid disease of bone.

Sudden rupture of the cyst, either spontaneous, surgical, or traumatic, may cause death, probably from the anaphylactic reaction to the antigenic cyst fluid. If death does not follow rupture immediately, the dissemination of fluid spreads the disease, since each scolex or grain of hydatid sand has the potential power to produce a hydatid cyst.

In hydatid infection of the lung hooklets may be found in the sputum. If the kidney is involved, they may appear in the urine. If a hydatid cyst of the liver ruptures into a bile duct, hooklets and portions of the cyst wall may be found in the stool.

Geographical distribution of hydatid disease includes Africa (Algeria, Egypt, Cape Colony, Tunisia, Liberia, and Abyssinia), Asia (Siberia, Palestine, Syria, China, Mongolia, Japan, Philippine Islands, Arabia, and Punjab area of India), Australia, Tasmania, New Zealand, Central and South Europe, South America (Argentina, Uruguay, Paraguay, and

Chile), and North America (Alaska, northern Canada, and occasionally the United States).

In Alaska and the northern part of Canada hydatid disease is found among the Indians and Eskimos. Sweatman,[2] in 1952, reported several hundred cases in human beings in northwest Canada, where sled dogs constitute the most serious definitive hosts. Foxes may also infect man: while he prepares their skins, he picks up eggs on his hands from the fur. The moose and caribou serve as intermediate hosts in the sylvatic cycle.

Diagnosis depends largely on five factors: (1) whether the patient lives or has lived in an endemic area and has been exposed to either the domestic or sylvatic cycle of hydatid disease; (2) physical examination, the most common finding being an enlarged liver, perhaps with a hydatid thrill; (3) laboratory procedures—finding hooklets in body discharges, surgical preparations, or aspirated fluid; (4) immunological tests such as the complement fixation or skin test (Casoni reaction), which are usually dependable; and (5) roentgenographic findings. A round reticulated shadow in the region of the liver is thought to be pathognomonic of echinococcic disease. These shadows vary in size from quite small to very large. The laying down of calcium in the walls of these cysts makes them roentgen-ray positive. According to Jidejian[3] the roentgenographic examination is not only helpful but often shows such characteristic findings that diagnosis is made certain. Calcification does not imply the death of the parasite nor does it signify immunity of the host to reinfection. However, when these round shadows are present, differential diagnosis should include gallstones, calcified amebic abscess of the liver, calcified hemangioma, primary teratoma, and, rarely, the calcified coenurus of *Multiceps multiceps*.

Complications include rupture, spontaneous, traumatic, or surgical, which may be followed by death or dissemination of scolices. Rupture into the pleura may cause hydrothorax or empyema; rupture into the peritoneal cavity may cause bile peritonitis. The cyst may rupture into the bronchus, bile duct, or ureter. Secondary infection may result in abscess. Eosinophilia may be caused by seepage of hydatid fluid.

Treatment is purely surgical and consists of the early and complete removal of the hydatid cyst, when possible, with marsupialization of the cavity. Closed aspiration of a cyst for diagnostic purposes is dangerous for two reasons: (1) allergic reaction to spilled or seeped fluid and (2) spread of the disease.

Small calcified cysts in most areas give no symptoms and require no surgery. There is no medical treatment or effective chemotherapy available, and deep roentgen-ray therapy is of no avail. If cysts cause symptoms, complete removal is indicated. At surgery, the cyst should be carefully walled off and 10 cc. of cyst fluid aspirated with needle and syringe. Then, after injection of 10 cc. of formaldehyde into the cyst, wait 10 minutes before continuing surgery.

REPORT OF CASES

CASE 1.* A 68 year old light-skinned Negro woman entered the Research and Educational Hospitals in 1957 with a ventral hernia that developed after a subtotal hysterectomy and bilateral salpingo-oophorectomy in 1937. At that time, the pathological diagnosis was fibroid uterus. She further complained of occasional diarrhea of three to four stools daily and loss of 60 lb. in weight. She still looked like a sturdy woman for her age. Her vision had been poor for 10 years.

Blood findings were as follows: hematocrit, 40 per cent; hemoglobin, 11.3 Gm.; white blood cells, 5,000 per cubic millimeter; serology, negative; and blood proteins, normal. Urine examination was negative except for urobilinogen (2+). The stool showed no parasites or ova.

Examination of the eye grounds revealed a marked circumscribed pigmented lesion in the right eye surrounding the disk and invading the macular area.

The gall bladder function was normal. Roentgenography of the gall bladder showed a number of rounded calcified densities in the region of the liver. These circular reticulated shadows caused considerable speculation (Fig. 1).

Further questioning of the patient revealed that her young years were spent on a farm 16 miles from Jackson, Miss., where her family kept hogs and hound dogs and usually a cow. She has lived in Chicago for 40 years with occasional visits to Mississippi.

When the ventral hernia was repaired by Dr. Cole, he removed a superficial cyst located directly under the liver capsule, which was easy to enucleate. The specimen was a solid, round mass, about 5 cm. in diameter, surrounded by a well-demarcated capsule. The cut surface was smooth, glistening, and fatty. Under the microscope the contained material was made up of flat cholesterol crystals. Using one fourth of the specimen, the fatty crystals were dissolved and the material centrifuged. In the sediment many hooklets were found along with a complete rostellum of 40

*The authors wish to express their thanks and appreciation to Dr. Warren Cole and the Department of Surgery, University of Illinois College of Medicine, for permission to report this case.

Fig. 1. A roentgenogram of the abdomen in Case 1. *(Left)* Seven rounded calcified reticulated shadows of varying diameters in the region of the liver can be seen. *(Right)* A higher magnification of a single mass.

hooklets arranged in two rows (Fig. 2). The large hooklets measured 33 to 40 μ and the small ones 26 to 33 μ. The microscopic section showed the characteristic laminated wall.

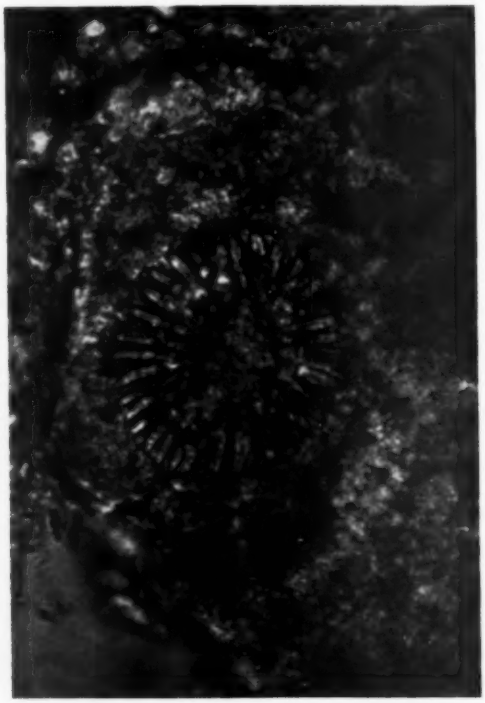

Fig. 2. Microscopic section of a complete rostellum found in reticulated mass removed surgically from the liver in Case I. Forty hooklets are visible.

The diagnosis of *E. granulosus* infection was made on the basis of these findings. The patient did well after surgery and still visits the clinic.

CASE 2. A 59 year old Negro man, born in Cedar Bluff, Miss., was transferred from another hospital with the diagnosis of "uremia, renal disease of unknown etiology." The names of his mother and father were unknown, as was his army service, if any. The interval between the onset of coma and his death was two days.

The informant stated that he was well until three weeks before the present hospitalization when he developed headache, nausea, vomiting, chills, and fever. A private physician gave him 2 million units of penicillin.

Laboratory findings were as follows: Urinalysis showed 4+ protein, 30 to 40 red blood cells per high power field, and granular casts. Spinal fluid was negative. Blood count revealed: hematocrit, 37 per cent; hemoglobin, 12 Gm. per 100 cc.; and leukocytes, 22,400 per cubic millimeter, with 87 per cent polymorphonuclear neutrophils and 13 per cent lymphocytes. Blood chemistry findings were: sodium, 130 mEq. per liter; potassium, 6.6 mEq. per liter; carbon dioxide combining power, 16.2 mEq. per liter; nonprotein nitrogen, 182 mg.; and thymol turbidity, 4.6 units. Wassermann reaction was negative but blood showed 2 Kahn units. Blood cultures were negative and no malarial parasites were found. The patient's temperature rose to 107 F before death. The blood pressure on first examination was 110/80 mm. Hg and dropped to 40/0 mm. Hg. He was given streptomycin and dihydrostreptomycin, with slight improvement followed by deterioration, abdominal distention, and deepening coma.

Physical examination revealed a well-nourished and well-developed, disoriented, semicomatose Negro man with pin-point pupils and bilateral cataracts. The disks were normal and there was no papilledema. The heart tones were distant, no murmurs were heard,

Fig. 3. A roentgenogram of the abdomen in Case 2 showing six rounded calcified masses in the region of the liver.

and there was no edema or clubbing. The liver, 3 cm. below the costal border, was soft and tender.

A roentgenogram of the abdomen showed smooth, round reticulated opacities in the region of the right lobe of the liver (Fig. 3).

The patient died 35 hours after he entered the hospital. No post-mortem examination was performed.

Diagnostic impressions were pneumonia, subphrenic abscess, hydatid cysts in liver, and brain abscess (amebic or pyogenic) or cerebral hydatid cyst. In this case diagnosis of hydatid cysts rests entirely on the roentgenographic findings, which closely resemble those in CASE 1. It is interesting to note that this patient also came from Mississippi.

CASE 3.* A 71 year old white woman entered the Department of Orthopaedic Surgery in 1957 with a fractured hip. The history revealed that in 1927 she suffered upper abdominal pain with chills and fever. The diagnosis of gall bladder disease was made and she was treated with hot packs and "medicine." The patient had lost 15 lb. in the three years before entering our hospital. Chronic constipation was her only abdominal complaint.

Laboratory findings were as follows: serology, negative; serum bilirubin, 0.9 mg.; alkaline prosphatase, 2 Bodansky units; and thymol turbidity and cephalin flocculation tests negative. Bromsulphalein retention was 2 per cent in 45 minutes, and there was no blood or parasites in the stool.

Physical examination revealed a mass in the right upper quadrant of the abdomen, which was undoubtedly the enlarged liver.

A roentgenogram of the abdomen showed multiple intrahepatic and intra-abdominal calcified cysts that varied in size from 1 to 4 in. in diameter. These large and small rounded calcified areas were sharply delineated and appeared to be within the abdominal cavity, chiefly in the upper half; some seemed to be within the liver parenchyma. One cannot help but speculate on the episode of upper abdominal pain with chills and fever in 1927. Was this a ruptured hydatid cyst of the liver? The liberation of hydatid fluid could have resulted in the dispersion of hydatid sand and the formation of multiple intra-abdomi-

*The authors wish to express their thanks and appreciation to Dr. Robert Ray and Dr. Claude N. Lambert and the Department of Orthopaedic Surgery for permission to report this case.

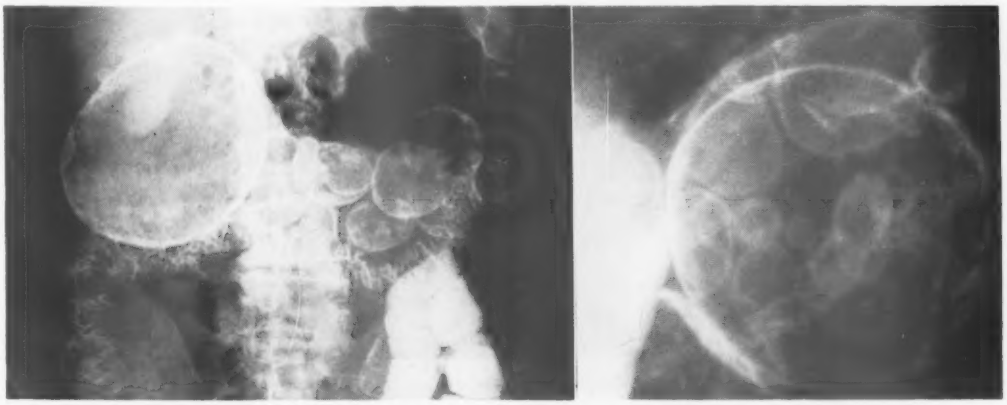

Fig. 4. A roentgenogram of the abdomen in Case 3. *(Left)* Many large and small rounded masses can be seen, some in the region of the liver and some definitely extrahepatic. *(Right)* A higher magnification of the large mass.

nal cysts (Fig. 4). The skin test for *Echinococcus* was negative.

This patient was born in St. Louis but had spent most of her life in Chicago. She had several pet dogs and twice in her youth visited a farm in Missouri where they had "hound dogs," a possible source of her infection.

The patient was willing to undergo an exploratory operation, but in respect for her age and fractured hip the offer was declined.

In this case the diagnosis was made solely from the roentgenographic findings.

CASE 4.* A Polish woman born in 1884, who came to the United States in 1909 and now lives in Lyons, Ill., was first registered at the University of Illinois Hospitals in 1924 and was referred to the Department of Orthopaedic Surgery in 1937. There have been many subsequent admissions, the last being in the spring of 1958. This patient was reported on by Hood, Lambert, and Thomas [4] in 1940.

The patient's initial complaint in 1937 was pain in the left hip, which she believed was the result of a fall in 1936. Roentgenographic fiindings at that time were negative but the roentgenogram taken in 1937 showed irregular decalcification of the left ilium with possible pathologic fractures. The condition suggested metastatic carcinoma, giant cell tumor, or isolated myeloma.

At surgery a Smith-Petersen incision was made. A cystic cavity about 2 in. in diameter was found extending through two tables of the ilium from which many grayish white circumscribed cystic masses, 0.5 to 1.5 cm. in diameter, rolled out along with a yellowish frothy material. As far as possible, all cysts were removed. The gross appearance of this material warranted the tentative diagnosis of hydatid cyst.

A search was made for hooklets and scolices but none were found. Histological sections of several cyst walls showed an inner surface of epithelium with certain areas surrounded by fibrous tissue. This constituted the poorly formed outer laminated layer characteristic of osseous hydatid cysts. Dew [5] states that most hydatid cysts of the bone do not produce scolices until they reach a cavity large enough for the accumulation of considerable fluid. The patient's wound healed by primary union but pain in the hip persisted. A complement fixation test for hydatid disease was 2+. In the Casoni skin test 0.2 cc. of antigen injected intracutaneously produced a papule that reached its maximum in two hours and consisted of an edematous area, 7 cm. in diameter, surrounded by a 4 cm. area of erythema. Results of control injections with saline solution and normal sheep serum were negative. In 1937 a roentgenogram of the abdomen using thorium dioxide definitely outlined the liver shadow, showing it to be uniform. This tended to rule out hydatid cyst of the liver.

In October, 1939, the patient was walking without crutches but with a marked limp.

In 1947 a roentgenogram of the abdomen showed an oval-shaped area of calcific density in the upper left quadrant (Fig. 5, *Left*), with similar areas in the right kidney region. In 1949 there were calcified cystic areas in the mid-line anterior to the spine. By 1951 a small calcified density was seen on the right side of the pelvis. In 1956 there was further collapse of the left ilium just superior to the acetabulum, with displacement toward the mid-line. During these years the patient was ambulating on crutches. In 1957 there was swelling of the left hip and a soft mass that could be reduced through the bony defect in the left ilium. At surgery, done through an extraperitoneal inguinal approach, a large dumbbell-shaped cyst herniated through the ilium and extended under Poupart's ligament into the left femoral canal. It contained a large amount of fluid and several small daughter cysts. As much as possible of the cyst was excised lateral to the ilium. Into the portion of the remaining cyst 15 mg. of nitrogen mustard was placed.

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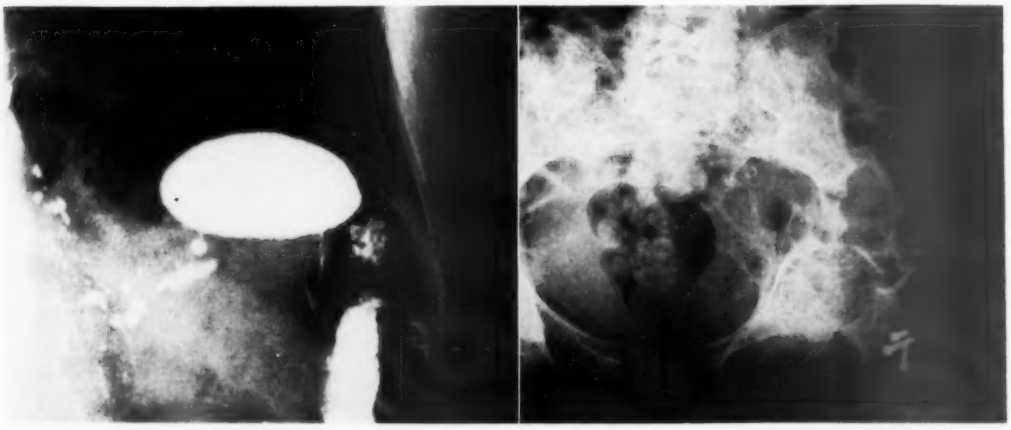

Fig. 5. *(Left)* A roentgenogram of the abdomen in Case 4 showing an oval, completely calcified mass just below the diaphragm on the left side. *(Right)* A roentgenogram of the pelvis in Case 4 showing the riddled left ilium, the repaired fracture of the femur, and many rounded cystic masses in the pelvis. At surgery, most of these pelvic masses were removed by aspiration.

During all these years the patient's weight remained constant and she was active, alert, and co-operative.

In 1958 the patient was operated upon for what was thought to be a hernial sac. It contained a hydatid cyst. Palpation revealed a large portion of the cyst to be medial to the wing of the ilium, extending down along the femoral vessels below Poupart's ligament and continuing through the ilium and bulging laterally. It could not be completely resected.

Microscopic examination of the aspirated material showed many hooklets and characteristic laminated cyst walls consistent with the original diagnosis of echinococcic cyst. The most recent roentgenograms show multiple cystic masses in the region of the liver and many intra-abdominal and pelvic cysts (Fig. 5, *Right*).

Case 5.* A 61 year old white man born in Greece, where he lived until he was 17 years of age, came to the United States in 1914 and was employed as a tanner in Wisconsin. For eight months he prepared hides, including those of sheep, and after that was employed as a glass blower. Abdominal cramps began in 1918, became severe in 1937, and were very severe in 1945. In 1945 he was operated upon for a perforated echinococcic cyst of the liver and peritonitis. He recovered from the surgical procedure but in 1947 developed palpable masses in the abdomen. At surgery many large and small cysts were removed from the omentum and mesocolon. In 1948 he developed a large painful mass in the left upper quadrant. At surgery the spleen was found to be riddled with hydatid cysts. Splenectomy was performed and one cyst was removed from the tail of the pancreas.

In 1949 he developed a mass deep in the pelvis and was referred to this institution. At surgery an echinococcic cyst the size of a small grapefruit (285 Gm.) was found and removed. There were multiple smaller cysts, from 1 mm. in diameter to 2 cm., and as many as possible of these were removed. When the large cyst was opened it contained many grayish white, translucent, soft daughter cysts filled with clear fluid. The microscopic section showed a typical capsule and a number of scolices.

In November, 1949, a cyst of the lung was found in the right lower lobe. This cyst was thought to have direct communication with the liver through the diaphragm. There were no symptoms referable to this cyst: no cough or chest pain. In 1950 bulbous lesions appeared on his hands. In April, 1951, a roentgenogram of the chest showed an increase in the size of the cyst (Fig. 6). On June 5, 1952, the patient suffered a severe upper respiratory infection associated with dyspnea and cough. On Aug. 19, 1952, the lower lobe of the right lung was removed. The surface of the diaphragm was adherent to the cyst above and adhesions were present between the diaphragm and liver. It was necessary to remove a portion of the diaphragm and, in order to close this defect, to remove the four lower ribs. Intercostal tissue and pleura were utilized to bridge the gap. The cavity was packed and allowed to granulate from within outward. During surgery the patient received 7 pt. of blood. The cyst was 5.5 in. in diameter and located in the lateral right base. Microscopic sections showed typical scolices. This patient also had decalcification of the spine, osteoporosis, and a marked dorsal kyphosis.

Fig. 6. A roentgenogram of the chest in Case 5 showing an *Echinococcus* cyst in the right lower lobe of the lung.

The patient made a satisfactory recovery and has been followed regularly in the surgical clinic for 10 years. He looks healthy and his weight remains constant. His last visit was in April, 1959.

Where did this patient contract hydatid disease? Echinococcic infection is common in Greece, where he lived for 17 years: 3,651 patients with this infection were operated upon in that country from 1950 to 1955.[6] However, this patient was also employed as a tanner in Wisconsin after his arrival in the United States, and his first symptoms developed four years later. This question can never be answered.

Discussion. Cases 1-5 were caused by *E. granulosus*, which usually takes the form of a single cyst chiefly in the liver but may involve any part of the body. Characteristically the cyst is filled with clear fluid and is surrounded by a thick, confining, laminated noncellular wall lined by a thin, cellular, germinal layer that buds off scolices and brood capsules. The presence of grapelike cysts or the characteristic laminated wall is considered diagnostic of hydatid disease even in the absence of scolices or hooklets, since a certain percentage of hydatid cysts are sterile and produce no scolices.

In man this condition often is found accidently on roentgenograms after calcium has been laid down in the cyst wall. Cysts are

*The authors wish to express their thanks and appreciation to Dr. Warren Cole and the Department of Surgery, University of Illinois College of Medicine, for permission to report this case.

chiefly seen in the liver and discovered on roentgenograms of the abdomen. Schlanger and Schlanger[7] in 1948 wrote: "We have never noted calcified intrahepatic structures of any other nature, which allows us to affirm that the existence of a round reticulated shadow in the liver is almost pathognomonic of hydatidosis." These authors, reporting 120 cases, found the order of frequency of location to be liver (60 per cent), lung (20 per cent), bone, kidney, and spleen. Others have found the condition in the brain, spinal cord, eye, diaphragm, heart, pancreas, thyroid, mediastinum, and other locations. Only calcified cysts can be visualized radiologically; uncalcified ones frequently remain undiagnosed.

Livers that contain cysts are enlarged, and the right side of the diaphragm is usually elevated and its excursion limited. There is a tendency for patients to become infected frequently so that the presence of multiple cysts is considered as multiple infections.

Of these 5 cases, 2 patients were from Mississippi, 1 was born in Poland, 1 was from Greece, and 1, born in St. Louis, had twice visited a farm in Missouri but had spent the greater part of her life in the city of Chicago. Of these 5 cases, 2 of the patients were diagnosed by the roentgenographic findings alone while 3 were operated upon and their diagnoses confirmed by study of tissue sections.

CASE 6.* The patient was born in the Ukraine and spent two years in a German prison camp during World War II. His present illness began about July 16, 1958, when he began to feel weak. On July 20 he had diarrhea for 24 hours, with many liquid stools containing no mucus or blood. Generalized itching began toward the end of July, and his urine appeared dark. Later the patient became "yellow," the stools appeared gray, and the itching became worse. Nausea without vomiting was present, accompanied by dull continuous pain in the epigastrium and right flank. The patient had no fever but lost 20 lb. in four months. He sought medical care in Edmonton, Alberta, Canada, where he was treated for hepatitis. After three weeks without improvement biopsy of the liver was performed; this showed "mainly biliary obstruction." Toward the end of October, 1958, laparotomy was performed. A very firm nodular mass was found, which involved the right posteroinferior portion of the liver, extended into the porta hepatis, and apparently encroached on the bile ducts. Biopsy showed a "fairly typical picture" of hydatid disease. The Casoni test was strongly positive. The patient did not improve after surgery and the jaundice became deeper.

The physician in charge referred the patient to Dr. John Reynolds and he arrived at St. Luke's Hospital, Chicago, on Nov. 13, 1958.

The family history, except for the place of birth, is not contributory.

Positive findings on physical examination were: (1) icterus, with evidence of scratching, and markedly yellow conjunctiva; (2) a long, longitudinal scar in the right upper quadrant of the abdomen, with slight tenderness in the region of the epigastrium and right upper quadrant; and enlarged liver, two to three finger-breadths below the right costal margin, that was not nodular but slightly tender; and (3) a slightly enlarged prostate (grade 1).

Laboratory findings were as follows: serology, negative; Casoni reaction, positive. Serum bilirubin level was 7 mg. per 100 cc.; albumin-globulin ratio was 2.3:4.9; cephalin flocculation test was negative; and amount of alkaline phosphatase varied from 15 to 31 Bodansky units.

A roetgenogram of the abdomen showed calcific densities in the region of the right liver shadow. The spleen was slightly enlarged.

Dr. Reynolds invited one of the authors (C.L.B.) to be present at the time of surgery (Nov. 26, 1958). A right paramedian incision was made to expose the liver. A large, hard nodular mass was found in the posterior portion of the right lobe of the liver, extending up to the hilus. Approximately 20 cc. of clear yellow fluid was aspirated from a single cyst contained within the mass but superficially located. This fluid was centrifuged and the sediment examined microscopically for scolices and hooklets. None was found. Results shown on frozen section of a piece of the mass were consistent with the diagnosis of multilocular hydatid disease. The gall bladder was removed. Exploration of the common bile duct showed occlusion of the duct system extending high into the liver. Because it was impossible to establish drainage through the biliary system, the Longmire operation was performed. Incision of the liver from left to right revealed large bile ducts that freely admitted a probe. A loop of jejunum was anastomosed to incisions in both lobes of the liver. The liver tissue was friable. During surgery the patient received 6 units of blood.

On Dec. 1, the color of the stool was dark brown and the icterus was subsiding; by Dec. 9 the wound was well healed.

Two months after the patient returned to Canada, his physician wrote that the icterus and itching had almost disappeared and the patient had gained some weight. This is all that could be expected as the surgery was purely palliative.

The cut surface of the tumor resembled a sponge (Fig. 7*A*). The microscopic section (Fig. 7*B*) showed multiple small and large cysts, and a higher magnification demonstrated the characteristic laminated wall, diagnostic of hydatid disease (Fig. 7C). A large piece of the tumor mass was minced and placed in artificial gastric juice in test tubes. Each day until digestion was complete the test tubes were centrifuged and the sediment searched for hooklets. None was found.

*The authors wish to express their thanks and appreciation to Dr. John Reynolds and St. Luke's Hospital, Chicago, for permission to include this case in their report.

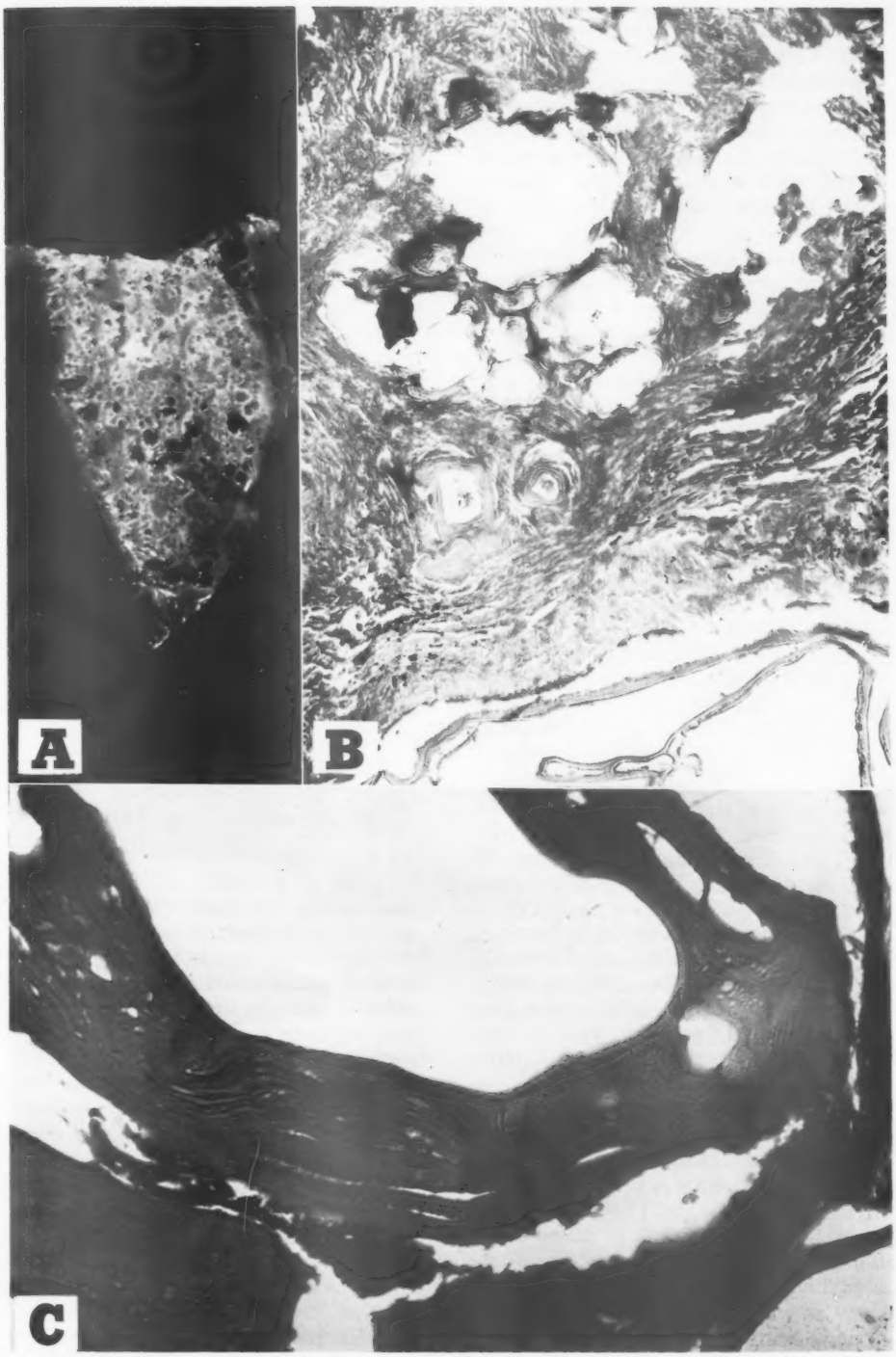

Fig. 7. (*A*) Cut surface of liver tumor in Case 6 showing multiple small cysts (X3.5). (*B*) Microscopic section of tumor in Case 6 showing cysts of varying sizes. In lower portion laminated, acellular cyst walls are seen (X81). (*C*) Typical laminated acellular cyst wall. No scolices are present (X405).

Discussion. Case 6 was caused by *E. multilocularis.* This type of hydatid disease was first described by Virchow in 1855.[8] It is found in southern Germany, Central Europe, Siberia, some islands in the Bering Sea, and European Russia. In man an alveolar cyst produces few scolices and lacks the complete laminated membrane that would confine its growth. The diagnosis usually depends upon the identification of the laminated membrane in tissue section or other parasitic elements. This form of hydatid disease may grow in any direction and may metastasize like a malignant tumor.

In the literature there is much discussion concerning the identity of *E. sibiricensis* and *E. multilocularis.* Rausch [9,10] in 1954 and 1956 concluded that these two species were identical and suggested the name *E. multilocularis* for both of them. There is confusion concerning the nomenclature of the south European and Russian species of *Echinococcus.* Hutchison,[11] in his thesis, accepts Rausch's conclusion. Rausch further states that only two species of *Echinococcus* infect man: the unilocular cyst caused by *E. granulosus* and the alveolar cyst caused by *E. multilocularis.* Not only the larval stages differ but the adult worms as well. Among other differences the number of testes in *E. granulosus* is almost twice that of *E. multilocularis.*

The life cycle of alveolar hydatid disease in south Europe and Asia is not completely known. The Eurasian form may be identical with that of the Bering Sea Islands but confirmation is needed.

According to Rausch,[9] who has written extensively on *E. multilocularis,* the larvae attain an alveolar form by the rapid exogenous formation of cysts that invade host tissue like a malignant tumor. Distant metastases are believed possible in disseminated cases of both forms of hydatid disease.

Rausch,[12] working on St. Lawrence Island in the Bering Sea between Alaska and Siberia, found the intermediate host of *E. multilocularis* to be microtine rodents *(Microtus)* and the definitive host the arctic fox. The fox shows no symptoms, but the vole has little resistance to infection and develops massive involvement of the liver with great distention of the abdomen that slows down its activity so that it is more easily caught by the fox. In 1955 vole infection reached 15.5 per cent. Of 233 Eskimos tested on the Island, 78 were positive for alveolar antigen and 37 for cystic antigen. The larval form in the Island voles is characteristically multilocular, with cysts varying from 1 to 4 mm. in diameter and coalesced into an amorphous mass, the shape being determined by the character of the organ involved.

Man is an accidental intermediate host and is unsatisfactory so far as propagation of the parasite is concerned, since the germinal layer is usually absent and scolices are rarely produced. Henschen and Bircher [12A] found that eggs of *E. multilocularis* can withstand freezing temperature for at least 60 days. Man becomes infected by handling fox furs, drinking infected water, or eating contaminated vegetables. He may remain symptom-free for years. For this reason the time and place of infection are difficult to determine.

Rausch [13] working on the Alaskan mainland found that dogs served as definitive hosts while moose and caribou were intermediate hosts. No infected rodents have been found on the mainland of North America.

It is obvious that alveolar hydatid disease caused by *E. multilocularis* differs greatly from cystic hydatid disease caused by *E. granulosus.* The adult forms in the definitive hosts are grossly similar, but the larval forms in the intermediate hosts differ greatly, as do the intermediate hosts themselves.

HYDATID DISEASE IN THE UNITED STATES AND CANADA

According to Magath [14] the first case of hydatid disease in the United States was reported by Low in 1808. In 1882 Sir William Osler [15] reported 61 cases, including 2 of his own. He spoke of the disease as endemic in certain parts of this country and found many domestic animals infected.

Magath [16] reported 519 cases of *E. granulosus* prior to 1940. He pointed out that 95 per cent of these occurred in immigrants. In 1947 Swartzwelder [17] reported 15 cases of hydatid infection in Louisiana; 10 of these patients were born in the United States. He emphasized that "human infection with this endemic disease may be acquired in this country." In 1949 Anderson and Swartzwelder [18] reported a case of cerebral hydatid disease in a 23 year old white native of Louisiana. There was no involvement of liver or lung. The cyst was surgically removed and the patient showed immediate improvement. Eight years later there

was no return of symptoms and the patient was engaged in manual labor.

Magath [19] in 1954 reported 40 cases from the United States, and the number of case reports has increased in recent years.[20-23] Katz,[24] in reviewing 556 cases from the literature, found that 38 of the patients were natives of 14 different states of the Union. He reported the first case originating in Massachusetts. This patient, born in Boston, had never lived in a rural neighborhood. Katz stated that the "Casoni skin test and complement-fixation tests increase the accuracy of diagnosis but cannot be counted on either to rule in or to rule out the disease." Sterman and Brown [25] in 1959 reported on 2 patients from Greece who were in the same family. Their dog, brought from Greece, harbored the adult worms, and ova were found in the dog's stool.

The volume of published papers on this subject in recent years is impressive. In fact, two endemic areas on the North American Continent have been identified, one in northern Canada and Alaska and one in the lower Mississippi valley, including the states of Mississippi, Tennessee, Louisiana, and other Southern states. Hutchison,[11] in his doctoral thesis on "Studies of the Hydatid Worm, *Echinococcus granulosus* in Mississippi," states: "The present study was done in an endemic area of Mississippi where infection in both definitive hosts, dogs, and intermediate hosts including man have been discovered in recent years." In one year, April, 1957, to April, 1958, a packing company in Jackson, Miss., slaughtered 33,153 swine; of these, 305 or 0.92 per cent were infected with *E. granulosus*. In southern and central Mississippi the percentage of infected animals was as high as 4.03 per cent. Hutchison found that 11 dogs infected with *E. granulosus* had been reported on and that 6 of them were from Mississippi. By experimental means he found that all dogs could be infected with *E. granulosus*. The dogs passed gravid proglottids and ova as early as 46 days after inoculation. No dog showed any symptoms, even when harboring 1,000 worms. Rodents could not be infected, by feeding them eggs. Cats, opossums, and raccoons could not be infected with adult worms.

Brooks and co-workers [26] are now preparing a paper on "Hydatid Disease: A Summary of Human Cases in Mississippi." They will collect all known reported cases and add a number of new unreported cases.

In northwestern Canada Sweatman [2] in 1952 reported several hundred cases of hydatid disease in human beings. Wolfgang and Poole [27] performed Casoni tests on 2,022 natives in the same regions and found that 31 per cent reacted positively. Workers in Canada are now using antigen prepared from the Canadian reindeer by the Institute of Parasitology at McGill University. Using this local antigen to perform Casoni and complement fixation tests has greatly increased the percentage of positive reactions.

Conclusion. With the identification of two new endemic areas on the North American Continent, hydatid disease becomes a public health problem.

SUMMARY

Six cases of hydatid disease are reported, 5 caused by *Echinococcus granulosus* and 1 by *E. multilocularis*. One patient was reported on previously and 5 are reported on for the first time. Two were diagnosed by roentgenography alone and 4 by surgical section and microscopic study. Three of the patients were immigrants (1 from Poland, 1 from Greece, and 1 from the Ukraine) and 3 were born in the United States and spent their lives here. Hydatid disease is discussed, with pertinent epidemiological factors cited.

ADDENDUM

On Oct. 8 one of the authors (C.L.B.) learned from Dr. Reynolds that the patient with *E. multilocularis* (Case 6) had died. A summary of the autopsy findings is as follows: 1. There was a large intrahepatic abscess. 2. The original Longmire anastomosis was not functioning. However, with the extent of the original disease as well as the secondary abscess, it was difficult to rule out obstruction of the anastomosed ducts proximally. 3. Metastatic lesions were present in the lungs and in one of these, after much search, definite scolices of hydatid were found.

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Deaths from Breast Cancer

Dr. Madge T. Macklin of the Department of Medicine, Ohio State University, Columbus, in the *Journal of the National Cancer Institute* (*22:* 927-951, 1959), stated that grandmothers, mothers, aunts, and sisters of women with breast cancer have a significantly greater incidence of this type of cancer than women in a similar age range either in the general population or in two sets of selected control samples. This excess cannot be entirely environmental in origin, since it is found almost to the same extent in both paternal and maternal grandmothers and aunts. It cannot be attributed to biased selection or to chance distribution of the trait through the population, since the excess is significantly greater than can be accounted for by either of these factors. Better recall by women with breast cancer, whose relatives are similarly affected, has no bearing on this excess, since the entire family of both control and breast cancer samples was thoroughly investigated. The ratio of the observed to the expected number of breast cancers is higher in unmarried than in married aunts and sisters. The fact that the presumably genetic factor responsible for this excess of breast cancer is enhanced to the greatest degree in childless women shows the interaction of genetic and extrinsic factors.

Hydrocortisone in Surgical Stress

Esther M. Greisheimer, M.D., Ph.D.

HYDROCORTISONE, KNOWN ALSO as cortisol, Kendall's compound F, and 17-hydrocorticosterone, chemically is a 3-20-dione, 11-beta-17-alpha-21-triol, delta 4 pregnene. This substance, when found in increased amounts in peripheral blood during and after periods of stress, such as surgical operations, indicates increased secretory activity of the adrenal cortex.

HISTORY

An active interest in the adrenal cortex in response to stress arose in 1936, when Selye [1] reported a loss of lipids from the adrenal cortex of rats after injury. Reed,[2] considering surgery as a period of stress or injury, was one of the first to make use of Selye's findings. He treated a group of surgical patients with adrenal cortical extract and reported a wide spectrum of beneficial results. He thought that such therapy helped to restore sodium and chloride concentrations to normal levels, maintain water balance, stabilize blood pressure, improve heart action, decrease annoying pain and gastrointestinal disturbances, increase resistance to infection, and speed the healing of the wounds.

MECHANISM

The mechanism by which the adrenal cortical secretory activity is increased during stress remained a matter of speculation for many years. Hume's [3] neuroendocrine theory, which is acceptable to many investigators, suggested that nerve impulses are conducted from the operative or injured area to the hypothalamus (median eminence) and that the result of their arrival is the release of a humoral substance that is transported to the anterior lobe of the pituitary through its "portal" or second arterial blood supply. When the humoral substance reaches the anterior lobe of the pituitary, it speeds up the production of adrenocorticotropic hormone (ACTH). This hormone is released into the blood stream and carried to the adrenal cortex, where it increases the secretion of the adrenal cortical hormones.

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GROUPS OF ADRENAL HORMONES

There are three important groups of hormones elaborated by the adrenal cortex. The first group includes those that affect "salt and water" metabolism. Aldosterone is the outstanding hormone of this group. The second group includes those hormones that affect carbohydrate metabolism and that are involved in the defense reactions of the body. This is the corticoid group, of which hydrocortisone is the chief constituent. It is found in adrenal vein blood, in peripheral blood, and in perfusates of adrenal gland. The third group includes those hormones that act as androgens or anabolic hormones and that are the source of the 17-ketosteroids of the urine.

In this short review only hydrocortisone in relation to surgical stress will be discussed. This means that the role it plays in carbohydrate metabolism, its own metabolism, and its various excretory products will not be considered. Neither will the exceedingly important hormones of the adrenal medulla (epinephrine and norepinephrine) be considered.

METHODS OF DETERMINATION

It is only in the last decade that satisfactory methods have been developed for the deter-

mination of hydrocortisone in plasma. Nelson and Samuels [4,5] proposed a method that has been widely used, but the Silber-Porter method [6] is thought to be more sensitive. Peterson and others [7] have evaluated the Silber-Porter method and suggested the following modifications: The hydrocortisone is extracted from the plasma with the organic solvent dichloromethane instead of chloroform. The solvent is then washed with aqueous alkali to remove disturbing "blank" material. Hydrocortisone is then extracted from the dichloromethane with sulfuric acid-aqueous-ethyl alcohol reagent containing phenylhydrazine. The yellow product produced by the reaction of phenylhydrazine and hydrocortisone is bisphenylhydrazone. It is measured in a spectrophotometer in the ultraviolet range. Suitable corrections must be made, reagents purified, glassware especially prepared, and so on. It is not an easy method and requires an experienced person to carry it through to a satisfactory conclusion.

Before chemical methods of analysis were available, attempts to determine the activity of the adrenal cortex by various methods, such as the decrease of cholesterol content of the adrenal cortex, decrease of the ascorbic acid content of the adrenal cortex, and decrease in the circulating eosinophils, were made. These are less applicable and less dependable than the chemical determination of hydrocortisone in the plasma.

BLOOD LEVELS

A normal range of 2 to 34, with a mean of 13 μg per 100 cc. of plasma, has been reported.[8] The blood level in any one individual varies from day to day, and there is a diurnal variation, with the highest level in the early morning.

TEST OF ADRENOCORTICAL CAPACITY

After satisfactory methods of determining hydrocortisone levels in the plasma became available, a test of adrenocortical capacity was devised, based on changes in plasma levels of hydrocortisone during and after administration of ACTH.[9-11] Fifteen to 25 I.U. ACTH in saline or glucose are given intravenously over a period of four to six hours. The level in plasma rises markedly in the presence of normal adrenal glands and returns to the initial level only after about six hours following the cessation of the infusion. The response is decreased in Addison's disease, entirely lacking in the absence of adrenocortical tissue, and exaggerated in patients with Cushing's syndrome and in normal women during the third trimester of pregnancy.

RESPONSE OF ADRENAL CORTEX TO SURGERY

Even in the preoperative period there is increased activity of the adrenal cortex, probably due to emotional stress. This is indicated by the high levels of hydrocortisone in the blood of patients on the morning of the operation, as compared with previous determinations and with the levels found in normal individuals.[12,13] Reports on observations of various types of preanesthetic medication seem to be lacking.

The effects of anesthetic agents prior to surgery have been observed by Virtue and coworkers.[14] They found that cyclopropane, thiopental sodium-nitrous oxide, and spinal anesthesia led to no significant changes. It was concluded that during the period of observation used (one hour) the afore-mentioned types of anesthesia produced no significant amount of adrenocortical activation. In the group of patients who received ether there was a significant increase in the mean value of free plasma 17-hydroxycorticosteroids, but the response was quite variable within the group studied. In contrast to the effects of anesthesia, one hour of surgery led to a marked increase in the 17-hydroxycorticosteroids in the plasma in all the groups receiving inhalation anesthesia.

Many investigators have noted an increase in hydrocortisone during surgery. Only a few representative results will be mentioned. Steenburg and others [15] found that the free 17-hydroxycorticoids rise early and steeply, reaching their peak on the day of the operation (if there are no postoperative complications). The fall is then steep, but the return to the initial level may require 48 hours or more in a smooth postoperative course.

Viikari and Thomasson [16] found that the level of plasma hydrocortisone doubled within one hour after the beginning of the operation. The subsequent rise was less marked. There was no correlation between the hydrocortisone level and the severity of the operation. It has been pointed out that, in cases of shock

occurring during surgery or in the immediate postoperative period, patients who are not benefited by blood replacement and vasopressor drugs may respond dramatically to hydrocortisone given intravenously.[17] In such cases there must be acute exhaustion of the adrenal cortex.

DAILY PRODUCTION

If one is to treat chronic adrenal insufficiency or acute adrenal insufficiency arising during or immediately after surgery, one should know the amount of hydrocortisone produced by the adrenal glands in normal individuals.

It has been estimated by radioactive methods that the human adrenal glands supply about 30 mg. hydrocortisone or similar steroids daily.[18] A totally adrenalectomized human being needs about 1 mg. hydrocortisone, given by intravenous infusion, hourly, to remain free of symptoms of adrenal insufficiency. Silber,[19] using another method, estimated that the adrenal glands secrete about 22 mg. hydrocortisone in 24 hours. Peterson and Wyngaarden [20] found a mean turnover rate of hydrocortisone of 0.9 mg. per hour in 9 normal subjects. A diurnal variation was noted, the production varying from 1.22 mg. per hour in the morning to 0.51 mg. per hour in the evening. Cope and Black [21] found that the production of hydrocortisone varied from 4.9 to 27.9 mg. per day in resting, convalescent subjects. They found the response to ACTH to be highly variable, the lowest figure being 21.8 and the highest 257 μg per 100 cc. plasma. In hypoadrenalism the mean production was 0.9 mg. per day.

COMMENT

In conclusion it may be stated that it is possible to evaluate fairly accurately the capacity of a patient's adrenal cortex before surgery and, in view of the information about the daily amount of hydrocortisone produced, to administer this hormone in adequate doses to patients whose adrenal glands are unable to respond normally to the stress of surgery. Hydrocortisone therapy offers a means of protecting patients from postoperative shock. Serious postoperative complications may ensue if the adrenal glands are hypoactive and hydrocortisone therapy is neglected.

If a patient has been taking cortisone or hydrocortisone before entering the hospital, it is possible to produce an adrenal crisis during surgery, due to failure of the glands to increase their secretion normally. Histories of surgical patients should always include information regarding previous use of cortisone, hydrocortisone, or ACTH therapy.[22]

Additional information regarding the effects of various preanesthetic agents, anesthetic agents, hypothermia, and hypotension is needed.

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Heart Disease

"The people of the United States are today only too well aware that diseases of the heart and blood vessels are the chief cause of death in this country," stated Dr. Paul Dudley White, a past president and founder of the American Heart Association. Dr. White continued by saying that heart disease is "too serious a problem to hide in a segment of a United Fund."

Dr. White pointed to united or community funds as "serving a most useful purpose" in meeting the needs of worthy charitable and welfare agencies in individual communities. He emphasized, however, that such united or community funds were never intended to enter the fields of extensive and intensive scientific research or the training of research workers, and that programs in these fields—such as those conducted by the American Heart Association and other major national health agencies—were "far beyond the scope or ability of the United Fund to support." He cited a recent report of the U.S. Department of Health, Education, and Welfare by a special group of consultants under the chairmanship of Dr. Stanhope Bayne-Jones, which conservatively estimated that expenditures for national medical research should reach 99 million to 1 billion dollars per year by 1970—half to be provided by government and half by private philanthropy and industry.

Stating that "submerging the problems of heart disease in local community chests or united funds would seriously delay our effective progress in the treatment and control" of this disease, Dr. White pointed to the well-planned and "harmonious and cooperative work" of both the National Heart Institute of the U.S. Public Health Service and the American Heart Association as being chief agencies in the advancement of our knowledge about all phases of heart disease.

New Medical Index Issued

A new cumulated index, to be published once a year, will replace the Quarterly Cumulative Index Medicus. Through the use of special equipment, the new index will be published two or three months after the end of a calendar year. Scheduled to be issued in 1960, the index will be a joint project of the AMA and the National Library of Medicine.

Artificial Insemination

Amey Chappell, M.D.

SINCE 1921 THE CHURCH, THE COURT, and the physician have concerned themselves with the moral, legal, and ethical aspects of the procedure known variously as artificial impregnation, artificial insemination, and therapeutic insemination.

Artificial insemination is a method used to produce conception by nonsexual means. Semen may be used from the patient's husband, in which case the insemination is termed homologous, or from a donor other than the husband, in which case it is called heterologous. It is the latter technique that is controversial.

The court has spoken of adultery and illegitimacy but without unanimity of opinion. The church has questioned, forbidden, or ignored. The physician accepts the method as effective and comparatively simple but shuns it in most cases because of its possible consequences and the tremendous responsibility placed on him when he practices it.

Propagation of livestock by artificial means probably was used early in the Christian era. Its success and usefulness has been uncontestably demonstrated by its widespread present utilization in the cattle industry in this country. Interest in artificial insemination of human beings grows yearly and it is assumed that its use by specialists in the field of infertility does also. However, it is unlikely that it will become frequently attempted.

The first use of this procedure on human beings, in 1799, is attributed to John Hunter.[1] There is no recorded use of the technique in the United States until 1866 when J. Marion Sims used it on 6 patients.[2] In these cases the patients' husbands were used as donors, and 1 of the 6 became pregnant. It is interesting to note that Dr. Sims reportedly abandoned the treatment after the termination of this small series. In 1920 the American Gynecological Society presented a symposium on sterility as a feature of its forty-fifth annual meeting. Dickinson[3] at this meeting reported 31 cases of homologous insemination, with 3 pregnancies resulting. Since that time, articles in the literature on artificial impregnation have become more frequent. Whereas the first series of the Catalogue of the Library of the Surgeon-Generals Office (1885) lists eight articles (none in English, and almost all dealing with animals), the latest Catalogue, the fourth series, has more than three pages devoted to the different aspects of the procedure. It is impossible to say when donor semen was first used—perhaps earlier and more often than is realized. At any rate, in 1947 the American Society for the Study of Sterility appointed Alan F. Guttmacher, John O. Haman, and John MacLeod to study and report on donor insemination. This distinguished committee concluded: "It is ethical and proper for physicians qualified in the diagnosis and treatment of infertility to perform artificial insemination."[4] In 1954 Kleegman[5] published a series of 116 cases in which artificial heterologous insemination was done. Conception occurred 74 times in 54 of these women. In the same year Payne and Skeels[6] reported 38 pregnancies in 67 women after a total of 336 inseminations in which donor semen was used.

Medical acceptance of the procedure has not led to complete religious approval. The Anglican Church and the Catholic Church ban donor insemination for their members. As far as is known, the Jewish religion has neither approved nor disapproved, and this on the whole is true of Protestant denominations.

If the churches are in disagreement so are the courts. It is important for any physician who plans to use this treatment to procure good legal counseling as to the law in his own state. This is especially true since English and Canadian judges have termed the procedure

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a successful insemination, tend to think less and less about the mode of conception. The delusion is enhanced if the wife soon after a missed menstrual period is referred to another obstetrician. She then becomes a normal maternity patient and the physician who has performed the insemination will have no qualms about signing a birth certificate. It is the best way.

For the couples who for one reason or another have been denied the pleasure of natural parenthood, the baby that results from a successful donor insemination seems more than ever a miracle. For the physician who has helped them to obtain the child there is satisfaction.

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Loss of Work Time from Respiratory Diseases

Respiratory illnesses caused about 40 per cent of all activity restriction in the country during the 12 month period ending June 30, 1958. The figures, compiled by the U.S. Public Health Service and published in a U.S. National Health Survey report, include the entire civilian population, with the exception of individuals confined to long-term institutions. Although Asian influenza was a factor in the high percentage, respiratory diseases are often the leading cause of activity restriction even in normal years. Circulatory diseases, injuries, and digestive diseases, in that order, were next in rank as causes of activity restriction.

Previous studies that indicated an inverse relationship between family income and amount of time lost from work are confirmed by the PHS report. Those with annual family incomes of less than $2,000 lost an average of 10.3 days in the year studied, while those in families with $7,000 or more a year in total earnings lost only 5.9 days on the average.

With age the number of working days lost by the individual increased, on the average, as follows: 17-44 years, 6.3 days; 45-64 years, 8.4 days; and 65 years or more, 11 days.

Children lost time from school in varying average amounts depending on their location: farm children lost the least—7.3 days; rural nonfarm children lost 7.8 days; and city children, the biggest losers statistically, lost an average of 9 days.

Report of the American Orthopsychiatric Association Convention*

Camilla M. Anderson, M.D.

At the 36th Annual Meeting of the American Orthopsychiatric Association, the official meeting ground for psychiatrists, psychologists, social workers, and persons from many other of the "helping professions" such as nursing, public health, religion, education, law, and medicine, there was but one general session, since only the Civic Auditorium was large enough to accommodate the thousands registered; most of the serious work was carried on in small workshop groups. Whereas this broadens participation, there is the inevitable sense of frustration resulting from awareness that, while one is attending the one workshop for which he is registered, there are 17 others in session at the same time, any one of which might well be the very one that would produce monumental personal and social changes!

Since a choice had to be made, I closed my eyes resolutely to such intriguing subjects as adoption, college guidance, delinquency, desegregation, medical education, and prenatal programs and limited myself to the three day symposium on Brain and Behavior. In these sessions there was presented some of the fundamental and basic research being carried out in the areas of cerebral metabolism, environmental deprivation and neural development, conceptual problems in relating brain and behavior, the electroencephalogram and behavior, early environmental influences on behavioral development, and the clinical and social problems posed by brain damage handicaps.

Some of the conceptually provocative statements encountered during these three days were as follows. 1. There is a difference in the behavior of experimental rats as compared with controls when the mothers have been subjected to stress during the gestation period. The offspring of both groups may appear identical but their behavior is different when subjected to stress. Prenatal influences are more effective in causing permanent alteration of behavior than are the influences impinging later in life. 2. Whereas there may be "hard" or "soft" views regarding whether it is the brain lesion or the premorbid personality factors in any individual that will determine whether rehabilitation can be achieved after injury, the fact is that if the lesion is in the left parietotemporal region the chances for successful rehabilitation are lessened. 3. The incidence of nervous system abnormalities is inversely proportional to the birth weight. There is, thus, a correlation between prematurity and brain inadequacy. Brain-damaged neonates do not have normal homeostatic controls; there are subtle neurological instabilities. 4. One half of the children with behavior disorders have abnormal electroencephalograms. Small cortical "storms" seen in the electroencephalogram may not be visible in overt behavior but are effective in inhibiting learning.

Looking at behavior (of brain-damaged children) is not an either-or proposition: both those who stress environmental factors and those who see only an organic brain basis for behavioral disturbances need to enlarge their frame of reference. However, the emphasis on psychodynamic formulations may accurately describe the situation but fail to define the cause. If brain damage is present, a deficit in

*Dr. Anderson attended the 36th Annual Meeting of the American Orthopsychiatric Association in San Francisco, March 30-April 1, as AMWA Representative.

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mothering is not the etiological point of reference with regard to behavior abnormalities. Because of failure to perceive the subliminal evidences of brain damage, misdiagnoses are frequent and "silk purse psychotherapy is undertaken on sow's ear problems."

The term "brain-damaged child" is far too broad to convey accurate ideas regarding patterns of symptomatology, since differing areas, patterns, and time (of origin) of brain damage produce different symptoms. Subtle perceptual as well as motor deviations may be better suggested by Bradley's term, "hyperkinetic impulse disturbance," by Doll's "neurophrenia," or by Anderson's "association deficit pathology—ADP" (see *J. Am. M. Women's A. 11:* April, 1956, or Beyond Freud, New York, Harper and Brothers, 1957).

Poor ego development and language disturbances are extremely common findings in brain-damaged children. These inadequacies produce psychologically immature persons who of necessity will have problems in living in a society. Many children diagnosed childhood schizophrenics have their basic symptomatology as a result of brain pathology. Language problems, often the product of some degree of aphasia or apraxia, inhibit interpersonal communication and ego development. The not infrequent verbal retardation in separating the "I" from the "you" arises not so much from a lack of self-differentiation as from an inability to shift the frame of reference. The greater the conceptual handicap, the more language tends to be used for orders and signals and the less for intercommunication.

There may be auditory as well as visual perceptual difficulty resulting in failure to perceive or use temporal sequences of sound. It is more difficult to teach reading to children with auditory perceptual difficulties than it is to teach those with visual perceptual problems. These children have difficulty in evoking auditory images to words.

Psychodynamic interpretations of behavior ignore aphasia and apraxia (as well as all other neurologically determined patterns such as perseveration, concreteness, partials versus wholes, integration deficit, and so forth) and may describe the situation but fail to define the true cause.

Distractibility, a very common symptom in brain damage, results not only from external or environmental stimuli but from internal stimuli as well (this becomes very important when one bears in mind their "subtle neurologic instabilities" and lack of "normal homeostatic controls" with resulting visceral imbalances).

Impulsiveness may derive from the children's problem with partials versus wholes; since they are unable to grasp or organize the larger wholes of any situation, it is therefore natural for them to react to that which they do perceive. It is the observer who interprets their behavior as impulsive, since he perceives a larger whole than does the child. There is also the fact that a defective cortex results in a defective analysis of incoming stimuli. Explosiveness is not an innate characteristic of brain damage but is related to excessive environmental demands (which cannot be adequately analyzed).

There were many suggestions for management of children with brain damage; some of the more concrete follow: Whatever can be done for brain-damaged children is in terms of what can be done for the parents and family. Since the time factor is long, it is best to begin early, remembering the emotional problems of the parents in accepting the handicap, in understanding the situation, and in following through. Parents should not be overoriented too rapidly. Patience, readiness for covering the same ground repeatedly, and alertness to the parents' unspoken questions, distortions, misconceptions, and unreal expectations are the physician's basic tools for helping the child.

Maximum harmony and stability of the environment is important. Development of socially useful habits through endless repetition of the act (often with help), reduction of the need for social interaction, avoidance of highly stimulating activities, clear-cut rules of conduct, and clearly defined and noncomplex goals requiring minimal use of the ability to organize, to analyze, or to symbolize are all part of the "treatment" process. Additionally, these children need the experience of belonging and of worthwhileness. These aspects of treatment make these children 24 hour a day treatment problems rather than clinic treatment problems.

The trend is toward keeping these children in their homes, insofar as possible, and integrated into the regular public school that has special departments for mentally handicapped children. Placement is commonly at a grade level approximately 2 years below the expected chronological age. They do best in small groups with much individual atten-

tion. The nature of the principal and the teacher in any school is more important than the school's having a special department for handicapped children.

There is much need for research in this field. New psychological tests may not be as essential in making more precise diagnoses as the development of new conceptualizations in evaluating the tests now in use. There are no standard preschool tests. In using the Bender test it is helpful to observe the results obtained when the time factor is markedly limited. Brain-damaged individuals require more time.

Dr. Linus Pauling, guest speaker at the one general session of the convention, estimated that 80 per cent of all mental disease in institutionalized patients is due to "bad molecules." Heredity, he emphasized, is the great lottery, and it will be factual knowledge in chemistry that will bring eugenics back to favor. This is not too speculative a statement, since 1,500 of the possibly 10,000 chemicals interacting in any living cell are already understood and biochemists are already beginning to take the imaginative leap from neurohumors to drugs and to behavior.

Loss of Life from Falls

Accidental falls are a major cause of mortality in the United States, accounting for more than 20,000 deaths each year—a death rate of 12 per 100,000 population—according to statisticians of the Metropolitan Life Insurance Company. The loss of life resulting from falls is more than 3 times that caused by fires and explosions, nearly 10 times that from accidents involving firearms, and about 15 times the toll from aircraft accidents.

Most of the victims of fatal falls are older people. The death rate from falls decreases moderately from infancy to a minimum at the school ages and then rises progressively with advance in age, slowly at first but very sharply in the later years. Under age 75 the death rate is higher for men than for women, but thereafter the rates are sharply reversed.

Somewhat more than half the people fatally injured in falls—about 11,000 a year—suffer their injuries in and about the home, reflecting the high frequency of falls among older people, who generally spend a major part of their time at home. Only 2 per cent of fatal falls—little more than 400 a year—result from accidents in factories, mines and quarries, and other industrial places.

Figures on fatal injuries in various types of falls are: falls on stairs, most of them in the home, about 2,500; falls from ladders, mostly in and about the home, 300; falls out of windows, from roofs, trees, chairs, and beds, and other falls from one level to another, 3,800; and falls on the same level—on the floor, ground, sidewalk, street, and the like—nearly 4,000. Nearly nine tenths of the people reported as fatally injured in falls on the same level are 65 years of age and older. Quite commonly these people fall while merely walking about the house; in many instances physical weakness or impairment is a contributory factor.

Austrian Schools and Courses for Handicapped Children Established

Vienna, the site of pioneer efforts in institutions for the deaf, dumb, and blind which were copied throughout Europe and the Americas during the early part of the twentieth century, now provides education for exceptional children through 32 schools and 36 special courses. In the rest of Austria 100 schools have been established for physically, mentally, or emotionally handicapped children. Federal, state, and city governments provide the funds for the special schools, whose staff members—teachers, physicians, and psychologists—work closely with local hospitals.

SPECIAL BOOK REVIEW

Appraisal of Applicants to Medical School

THE FOURTH TEACHING INSTITUTE of the Association of American Medical Colleges devoted its 1956 meeting in Colorado Springs to the appraisal of applicants to medical school. The account of their labors makes very interesting reading for those actively interested in the future of the medical profession. This study was conducted by a symposium of 21 experts in higher education, psychological measurement, social science research, clinical psychology, psychiatry, counseling, executive selection, medical education, and medical school administration. Many problems were discussed and explored but few were answered.

The medical profession in the United States has been taking a long look at itself and seems dissatisfied with what it sees. This dissatisfaction with the processes of higher education is not confined to our profession alone but is widespread through many other disciplines. This educational ferment is felt in the secondary schools where, in spite of the need for scientifically trained minds, less and less time, effort, and money are expended on the acquisition of a scientific education. More than half of the high school graduates qualified for higher education do not go to college. The reason for this is not entirely economic. Part of the trouble is a lack of motivation at this level.

The drawing power of medicine today is considerably less than it was even 10 years ago. In 1950, 40 per cent of the entering freshman class in medicine came with an A average, 43 per cent with a B average, and 17 per cent with a C average. In 1955, only 16 per cent came with an A average, 71 per cent with a B average, and 14 per cent with a C average. What has happened in the meantime? At about this time the Engineering Manpower Commission and the American Chemical Society became alarmed about their recruitment of worthy secondary school students. Both groups launched well-organized recruitment drives. To a considerable extent both have been successful. Perhaps medicine would do well to emulate them in trying to interest more of the top students graduating from our secondary schools.

Difficult as it is to predict success or failure in medical school, it is even more difficult to predict success or failure in the various types of medical practice. Research should be started to develop measures of the capacity for growth and development of the student in any given college setting. If we exclude from admission students classified as certain types, we may exclude a great number with the capacity for change, growth, and the successful completion of their medical education. Further research is indicated for the development of techniques to deal with student difficulties, either by changing the social structure of the school or by a better understanding of student behavior. Since medicine is not a unitary profession, its many facets should attract students with a wide variety of motivating forces. At the present time we lack an adequate description of the ideal medical student. This is no less true of the personnel in other educational and professional fields. The greatest need is for criteria against which we may measure the ideal student. We are interested not only in intellectual prowess but in the interests, personality characteristics, attitudes, and motivations of those who choose certain fields of endeavor.

Some of the factors causing great anxiety among prospective medical students include as the most frequent: competitiveness among premedical students, length of time involved

*The Appraisal of Applicants to Medical Schools. Report of the Fourth Teaching Institute, Association of American Medical Colleges, Colorado Springs, Colo., Nov. 7-10, 1956. Edited by Helen Hofer Gee and John T. Cowles, Association of American Medical Colleges, Evanston, Ill., 1957.

in acquiring a medical education, and inadequate financial resources. Students show a greater concern about the method of selection and reasons for rejection than about any other aspect of medical education. These complaints are well known both to premedical and medical educators and their concerns are shared by the admissions committees whose business it is to make the selections. Due to the cost of medical education and the length of time involved, it is necessary to choose as carefully as possible those who, it is believed, will finish the course and contribute the most to the profession. Once a student is admitted to a school of medicine he has a very great chance of being able to finish training. It is easier to gain admission to a college of engineering but the mortality is about 50 per cent. If the medical schools are really willing to accept good citizens with substantial but not brilliant grades, the information will filter down to the college level rather quickly and will help the colleges prepare students with more genuine interest in learning than in point averages.

Still another area needing study is the understanding of personality factors involved in withstanding the psychological strains of being a medical student and becoming a physician. The excessively dependent positions in which such students are placed, the inadequate outlets for their hostilities, the problem of authority toward patients and from the faculty, feelings of intense competition with one's peers with whom one is supposed to be on the best of terms, and coming face to face at close range with the problem of death, often for the first time, are only a few of the strains. At the same time that their contemporaries in other fields are earning an adequate living and establishing themselves in society, medical students are kept in a prolonged state of adolescence. Despite this, we demand that they show mature judgment and, upon graduation, we expect them to show qualities of independence.

It is true that most students withstand these vicissitudes and succeed. But at what cost? When such problems are imperfectly mastered, society bears the cost in the ability of a physician to function at his optimum, particularly in his relationship with patients. When, through research, we have a better understanding from a dynamic standpoint of the significance of being a medical student and becoming a physician, we can do a better job of selecting students and providing an education that, in addition to imparting technical knowledge, helps students become good physicians in the best meaning of the word.

Some experiments are going on in the preprofessional and professional fields of education. These have not been followed long enough to evaluate their place in the educational process but can at least be reported here. Northwestern University has a combined course in premedical and medical education, forming a continuous course in the basic sciences, clinical medicine, the humanities, and the social sciences. Students are admitted directly into this course upon matriculation at the University. Dr. Thomas R. McConnell has suggested another way of integrating medical and liberal education around a study of human development. Such a center of interest would involve a good many disciplines: natural sciences, social sciences, and the humanities. Such a course is basic, not only to medical education but as a background for such fields as teaching, social work, clinical psychology, nursing, and, in fact, all of the professions and occupations involving the welfare of human beings. A program such as this would provide greater continuity in a student's educational experience. Another means of ensuring this continuity in education is through the advisory system, such as the one set up at the University of Buffalo Medical School. Faculty advisers work closely with small groups of students throughout their residence in medical school.

E. Lowell Kelly, Professor of Psychology at the University of Michigan, discussed "Quality Control" in medical education. He used as his example the results of the Michigan Project on the Prediction of Professional Competence in Medicine. He believes that not only the profession as a whole but the individual schools represented by the Association can ill afford not to institute a program of quality control in student selection or to continue an evaluation of curriculum and the impact of the teaching program on the individual student.

The typical medical student today, if he were not going into medicine, would be a big businessman, manufacturer, production manager, or engineer rather than a teacher, minister, social worker, or some other professional person interested in the welfare of mankind. All of the evidence available to us leads to the conclusion that the typical young physician has little interest in the cultural aspects

of the society in which he lives and has very little sensitivity to or feelings for the needs of the community unless these contribute to his income. Since Dr. Kelly does not believe that the Michigan students are different from any other, he is worried about what is happening to the profession. He believes that we, as leaders of our profession, are in a position to do something about this and owe it to ourselves and to society to take some action. For example, his data suggest that if you want to select the kind of student who is going to be interested in public health, general practice, and so on, you should pick a person with a high "Strong" score on the Carpenter key. To be more certain of your selection, you pick a person who says he is going to earn part of his way through medical school, a person more like a physicist or chemist.

Knowledge that enables us to predict the characteristics of the products of our medical schools puts in our hands the power to change the nature of the entire profession. Such power is almost frightening, but refusal to use it may be an abdication of responsibility.

—Mary K. Helz, Chairman
Medical Education Committee

Food for Future Travelers in Space

Scientists of Leningrad University's Botanical Institute state that microscopic water plants are likely to provide an ideal food for the future traveler in outer space. Results of experiments being conducted in Leningrad show that some forms of algae contain more vitamins than lemons do and that others can produce more fats than many varieties of oil-bearing seeds. (UNESCO)

Evaluation of New Drugs and Medical Education

Speaking at a Symposium on Clinical Evaluation of New Drugs, held in Philadelphia in April, Dr. John H. Moyer of the Hahnemann Medical College and Hospital, Philadelphia, made the following points in regard to "Critical Attitudes in Medical Education": With the increase in money spent on research—the total to date exceeds the total sales of drugs in 1940—"we can expect more and more new drugs to become available." As the life of a new drug is very short, the need is increased "for physicians to understand the dynamics of these compounds rather than the empirical actions of a specific drug. If we place the emphasis on dynamics of the drug, a student can then use this information" for evaluation of new compounds that may be developed much later in the future.

The attitude "in some areas" that drug evaluation is "beneath" the dignity of those in academic institutions needs correction.

In evaluating new drugs "there is no substitute for the objective test." In the fields of neuropsychiatry and in treatment of neurosis, however, experienced and less experienced investigators will get different results from the same objective test: In one study of psychoneurotic patients, an experienced investigator, a resident, and an intern all evaluated the same drug, which was used on 100 patients. On the basis of administration of the same drug, the intern noted 61 per cent excellent results, the resident noted 57 per cent, and the experienced investigator noted only 47 per cent.

Establishing a good dose range is another necessity in valid judgments of new drugs. As more drugs are developed, individualization of the dose and dose adjustment become primary considerations.

The Symposium, presented at the Albert Einstein Medical Center, was sponsored by Nordson Pharmaceutical Laboratories, Irvington, N.J.

Medical Briefs

MULTIPLE-ANTIGEN VACCINE APPROVED BY PHS

A vaccine that protects against four diseases—infantile paralysis, diphtheria, pertussis, and tetanus—has been formally approved by the U.S. Public Health Service for use in children of preschool age. Clinical trials showed that the components of the vaccine are effective when administered separately against the four diseases. The initial series of the vaccine should consist of three doses spaced one month apart; a fourth injection should be given six months to a year later.

Citing the "well-known hypersensitive reaction" of older children or adults to full doses of diphtheria toxoid, the PHS advised that the vaccine be administered only to children under 5 (or at most, 8) years of age.

Surgeon General Leroy Burney recommended that physicians continue to urge and administer Salk vaccine, as large quantities of the new multiple-antigen vaccine may not be available for some time. He called for a "block-by-block" campaign to ensure that the whole population received the protection of Salk vaccine, saying that this was "the only way" to avoid reoccurrence of the 1958 toll of 200 deaths and 3,000 cripplings from the disease.

COAGULASE ADDED TO AVIRULENT STAPHYLOCOCCI

The addition of purified coagulase to avirulent staphylococci suspended in distilled water made the microorganisms fatal to 75 per cent of the test animals into which the enzyme-treated staphylococci were injected intracerebrally. A close association between staphylococcal pathogenicity and the production of coagulase had been noted in the past, but until now the function of coagulase as a virulence-enhancing factor was not fully understood. Both avirulent (coagulase-negative) and virulent (coagulase-positive) staphylococci are produced in human serum when coagulase is added; however, the coagulase-negative staphylococci fail to reproduce in untreated serum. Research to date indicates the possibility that coagulase neutralizes a normal bacteriocidal factor present in human serum. The new theory and evidence were presented by Drs. Richard Ekstedt and William Yotis of Northwestern University Medical School, Chicago, at the recent meeting of the Society of American Bacteriologists in St. Louis.

MANAGEMENT OF THROMBOPHLEBITIS

On page 165 of the *Journal of the International College of Surgeons* for February, 1959, Egmont J. Orbach, M.D., evaluated the results of short-term therapy with phenylbutazone in the treatment of 22 patients with acute thrombophlebitis affecting superficial and/or deep veins of the extremities. Signs of acute inflammation subsided rapidly and completely in almost every case, and it proved unnecessary to administer phenylbutazone for longer than one week to any of the patients treated. Phlebitis recurred in 2 patients; a second course of phenylbutazone was successful with 1, but was not attempted with the other. The absence of toxic effects of phenylbutazone under these conditions indicates that this agent may be extremely helpful in the management of thrombophlebitis involving either superficial or deep veins. Further investigation of its potentialities in the treatment of these disorders is indicated.

BCG VACCINE 80 PER CENT EFFECTIVE IN LONG-TERM STUDY

The incidence of tuberculosis was reduced by 80 per cent with the use of BCG vaccine in a long-term study reported by Sol R. Rosenthal, M.D., Chicago, to the National Tuberculosis Association—American Trudeau Society Meeting. Dr. Rosenthal said that of 1,716 vaccinated children only 16 contracted tuberculosis, compared with 57 who became ill in the unvaccinated control group of 1,665 children. The study group was made up of children who were born in Cook County Hospital, Chicago, between 1937 and 1948 and who lived in areas with high rates of tuberculosis.

NEW ANTHELMINTIC "CURATIVE" IN FOUR PARASITIC DISEASES

The compound anthelmintic dithiazanine, tested in more than 2,000 patients, was described as "curative" in treatment of four major parasitic diseases—trichuriasis, ascariasis, strongyloidiasis, and enterobiasis—by Dr. William W. Frye, Dean of the Louisiana State

University School of Medicine in New Orleans, at a meeting of the Kentucky Academy of General Practice in Louisville. Follow-up studies on more than 1,000 of the patients revealed that 95 per cent of the cases were cured within five days of therapy with the broad-spectrum drug. A 4 year old patient with trichuriasis, who had an egg count of 123,000 before treatment, was treated with dithiazanine for 12 days, by which time the count was zero. In 42 patients with ascariasis, the egg count was reduced by 97 per cent within five days of thrice-daily treatment.

As dithiazanine is not absorbed from the gastrointestinal tract, it may be used safely in treatment of pregnant women and patients suffering from other conditions such as anemia, nephrosis, and cardiac disease. Side effects of nausea, vomiting, and occasional diarrhea have been noted, but have not been so serious that termination of dithiazanine therapy was indicated.

Combined with tetrachloroethylene, the drug is also effective in treatment of hookworm, Dr. Frye reported.

NEW POLIO STUDY

In order to conduct a study of paralytic poliomyelitis in patients who have received three or more inoculations of Salk vaccine, Dr. Jonas E. Salk, in co-operation with The National Foundation, asks that stool specimens and comparisons of antibody tests of acute-phase and convalescent-phase blood specimens be taken as soon as possible after the onset of this disease, and that physicians who suspect the presence of this disease notify their local chapter of The National Foundation.

CRETINISM COUNTERACTED BY THYROID EXTRACT

A major discovery in the treatment of cretinism before birth has been reported by physicians at the University of Michigan Medical Center, Ann Arbor. Cretinism has been counteracted in one child to date, and the treatment has had no ill effects on mother or child.

A research team headed by Drs. Edward A. Carr and William H. Beierwaltes conducted extensive studies of the disease before applying their findings to the correction of the disorder. Two supporting discoveries that led to successful treatment were that: (1) a woman who has given birth to two cretins has a very great chance of producing a cretin in her next pregnancy, and (2) thyroid extract given in strong doses to pregnant animals is transmitted to the fetus.

Two women, statistically likely to give birth to cretins, were given massive doses of thyroid extract—seven times the normal daily dosage prescribed for hypothyroidism—throughout the remainder of their pregnancies. Of the two noncretinous infants who were subsequently born, one child had no thyroid gland and would definitely have been a cretin if the treatment had failed.

Dr. Beierwaltes said that the next step is to seek a method for diagnosing cretinism in advance in a couple's first child.

RISE IN INCIDENCE OF MEASLES IN 1958

Two factors are given by the U.S. Public Health Service as accountable for the increase, as compared with 1957 and with the average for the period 1953-1957, in the incidence of measles: (1) the increase in the number of children, a continuous trend since the end of World War II, and (2) the sites of the recent epidemics, predominantly large metropolitan centers where the concentration of population causes a sharp rise in the total figures. In the first 35 weeks of 1958, 710,230 cases of measles were reported to the PHS; in the comparable period of 1957, 449,654 cases were reported. In the week ending Aug. 30, 1958, there were 1,327 reported cases; in the same week in 1957 there were 1,001.

DIVISION OF GENERAL MEDICAL SCIENCES FORMED

Grants for research in the process of aging and in basic or preclinical sciences such as experimental pathology, physiology, and biochemistry will be "two significant components of the program" of the newly formed Division of General Medical Sciences of the National Institutes of Health, according to Dr. George Halsey Hunt, Chief of the Division. "A wide range of specific noncategorical research projects . . . which touch on the work of many Institutes, yet belong exclusively to none," will also be covered by grants administered through the Division. Such projects "could involve congential anomalies, endocrinology, toxicology, and biometry." Programs of grants will be developed by the National Advisory Health Council, which administers the entire NIH grant program, and directed primarily toward medical schools, hospitals, and nongovernmental scientists.

World Health Organization

COLOMBIA RATIFIES WHO CONSTITUTION

The Pan American Sanitary Bureau announced in May that the Republic of Colombia has ratified the Constitution of the World Health Organization, thereby paving the way for that nation's membership in WHO. Colombia was the only state in the Hemisphere that had not ratified the WHO Constitution; all other American nations are already WHO members. While Colombia has been a member of the Pan American Health Organization since PAHO's beginnings in 1902, the Nation's active participation in WHO will now make it easier to take the co-ordinated international measures necessary to protect the peoples of the Americas from disease.

WHO CONFERENCE ON MATERNITY CARE IN WESTERN PACIFIC

A new concept of health was stated as having been recognized as a result of the recent Western Pacific Regional Conference on Maternity Care convened by WHO at its Regional Office in Manila, Philippines, March 9-20.

The statement was made by Dr. Edith Alexander, WHO Regional Adviser on Maternal and Child Health. Summarizing the significant points of the discussion during the conference, the first of its kind, Dr. Alexander said that as the participants reviewed the situation in their own countries it became clear that there is room for improvement not only in maternity care but also in the wider field of maternal and child health services and in the closer integration of these services with the over-all health program.

Discussion revealed the need for constant evaluation of what is being done in the way of meeting current health needs. There was general agreement that the modern concept of health requires that the basic training for medical, nursing, and midwifery students should also include principles of public health. It was recognized that planning, taking into account the local problems, resources, and changing requirements, is essential, while the need for a link between the research worker, the teacher, and the field worker was also emphasized.

The meeting further stressed the importance of public health and clinical workers and maternal and child health administrators being kept up to date on new developments in scientific and medical research and on new methods and techniques as they are developed.

Discussions during the meetings centered on the following four main items: the basic elements in any maternity care service in terms of local needs and resources; practical ways of improving maternity care services; preparation and most effective use of personnel; and maternity care as an integral part of the total health program of a country.

CONFERENCE ON LEPROSY IN AFRICA

An Inter-African Conference on Leprosy Control was held in Brazzaville from April 14 to 21, under the auspices of WHO and the Commission for Technical Cooperation in Africa South of the Sahara. The meeting was attended by some 30 participants, mainly from Africa. In addition to reviewing reports on the leprosy situation in countries and territories of Africa, the participants focused attention on organization of mass campaigns, use of mobile teams and fixed treatment centers, the role of leprosariums and leprosy villages, integration of leprosy campaigns into public health activities, segregation of child-contacts from their infected parents, and the social, physical, and psychological rehabilitation of patients, with the return to society of noninfected and cured patients.

NEHRU STRESSES NEED FOR SPEED IN ANTIMALARIA CAMPAIGNS

Prime Minister Jawaharlal Nehru of India warned against slackening efforts to eradicate malaria and stressed speed of attack as a most important factor in a successful campaign. Mr. Nehru, addressing the opening session of the Third Asian Malaria Conference held under WHO sponsorship in New Delhi in March, declared, "There is great danger in going slowly lest the enemy get accustomed to your weapons, and then it will not be easy to master it." He discussed the effects on the national economy of a chronically malarious state of health and expressed the opinion that, although other diseases might be more painful and more likely to be fatal, malaria was "in some ways the worst" disease in that it enfeebles whole populations and saps away vital energies.

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Research in the Service of Medicine.

President's Message

The heading of a syndicated newspaper article, "Path to Peace Hidden in a Pizza Recipe?" startled me when I read it. But after a few paragraphs I realized that Dorothy Roe was merely reiterating the discovery made by leaders in many walks of life: "You can't hate somebody with whom you've just exchanged recipes for corn bread or pizza." As "medical diplomats" of the World Medical Association, Medical Women's International Association, Pan American Medical Women's Alliance, or American Medical Women's Association, we talk the language of medicine with our colleagues from foreign lands. And, in addition, as women, wives, and mothers, we exchange recipes for foods and baby care and make close and permanent friendships.

The tremendous interest in the two large international medical meetings held on the North American continent this summer confirms that belief. The Second World Conference on Medical Education in Chicago, Aug. 30-Sept. 4, fulfilled Dr. Bauer's hope that it might provide "a world forum for the exchange of opinions on the methods and problems of postgraduate medical training." In addition, it gave many of us an opportunity to entertain a national of another country in our home.

Those of us from the United States had a double privilege in being able to attend the XIIIth General Assembly of the World Medical Association in Montreal, Canada. We need to get together more often with our Canadian and English medical friends in order to break down "the barrier of our common language." Translators produce no more laughable misunderstandings than those resulting from the differences in the English language as it is spoken on the two sides of the U.S.-Canadian border or on either side of the Atlantic. I had a hard time convincing an English friend that we in the United States would hesitate to headline a speaker at one of our meetings as "the notorious surgeon from New York." But this is considered excellent English in England.

The similarity of medical experiences everywhere, the aid of our common medical Latin, and our mutual pleasure in service to our fellowmen make it particularly easy for physicians to smooth the way to world peace. We are medical diplomats—the latest interpretation of the initials M.D.

Jessie Laird Brodie M.D.

TO AMWA MEMBERS:

Greetings! We are anxiously waiting for a big delegation from America to the 1962 MWIA Congress. Please do not disappoint us!

The Philippine Medical Women's Association

American Medical Women's Association, Inc.

TENTATIVE PROGRAM
1959 MIDYEAR MEETING AND SPECIAL MEMBERSHIP MEETING CALLED BY PRESIDENT

The Hotel Arlington, Hot Springs National Park, Ark. *Nov. 12-16*

Thursday, Nov. 12

Committee Meetings

1:00 p.m.—Executive (Montagu Room)
3:00 p.m.—Finance (Montagu Room)
7:30 p.m.—Executive (Montagu Room)
Others as called by the chairmen

Friday, Nov. 13

9:00 a.m.—Formal convening of the 1959 Midyear Meeting of the Board of Directors (Crystal Ballroom)
Jessie Laird Brodie, M.D., President, presiding

12:30 p.m.—Luncheon (Fountain Room): Panel on "Physician, Patient, Community Relationships"
Moderator: Claire F. Ryder, M.D.
Discussants:
Claire F. Ryder, M.D., "Nature of Medical Care Today"
Frances Keller Harding, M.D., "The Physician's Role and Quandry"
Miss Loyce Bonner, "Community Activities"
To be announced, "The Volunteer's Role and Responsibility in Total Care of the Patient"
To be announced, "The Patient's Viewpoint"
Euclid M. Smith, M.D., "Chronic Illness"

3:30 p.m.—Sight-seeing tour or golf (see reservation blank, page 870)
6:30 p.m.—Buffet dinner (Country Club) and dramatic reading of "Pettit Jean" by Mrs. Margaret Turner Moody

Saturday, Nov. 14

Morning—Free time
12:00 noon—Luncheon (Fountain Room): Plans for the year
Claire F. Ryder, M.D., President-Elect
1:00 p.m.—Business session (Crystal Ballroom)
4:00 p.m.—Hearing on resolutions, Reference Committee A (Crystal Ballroom)
6:30 p.m.—Dinner (Fountain Room). Speaker: Ann Wilkins Appelbaum, M.D., The Menninger Clinic, Topeka, Kansas

Sunday, Nov. 15

8:30 a.m.—Business session
10:30 a.m.—SPECIAL MEETING of AMWA membership called by President, Dr. Brodie
12:30 p.m.—Luncheon (Fountain Room). Presentations: Medical Women of the Year and Elizabeth Blackwell Award
3:00 p.m.—Continuation of Special Meeting of the membership
7:30 p.m.—Dinner (Crystal Ballroom): "Living Portraits," Dr. Bernice C. Sachs, Commentator

Monday, Nov. 16

8:00 a.m.—Buses leave the Arlington Hotel for Little Rock
Note: The following program has been arranged by the Arkansas members:
Preceptorship panel (participants: faculty members and students of the University of Arkansas Medical Center), morning tour of Medical Center, luncheon at Medical Center, tea
Dinner for those who will leave late in the evening or Tuesday

All members are welcome and urged to attend

For room reservations, see page 872; for meal reservations and special events, page 870.

AMWA Midyear Meeting

IN HISTORIC AND SCENIC HOT SPRINGS NATIONAL PARK

Lake Hamilton and scenic state highway 7.

The site of the 1959 Midyear Meeting is both scenic and legendary. Hostile Indian tribes, knowing the curative value of the hot waters, waged wars for years to gain possession of the springs. After many years, the Hot Springs area was declared neutral territory by these tribes.

History records that De Soto and his party visited the area in 1541 as did La Salle in 1682, who claimed these lands for France. The first white settlers arrived in 1800. In 1812 the first bathhouses were erected. This was the beginning of the present health and recreation resort.

An act of Congress in 1832 set aside Hot Springs and the surrounding territory for future disposal by the United States, thus guarding this area from monopoly and commercial exploitation in perpetuity.

In 1921 another act of Congress changed the name of the 1,006 acre area to Hot Springs National Park and placed it under the regulation of the Director of the U.S. Department of the Interior-National Park Service.

The 47 hot springs in the Park have a constant daily flow of almost a million gallons of water, with a constant average temperature of more than 140 F. The water from these springs is used in all the bathhouses in the area.

The area is renowned for its diversity of recreation: water sports, year-round fishing, golf, horseback riding, and hiking. Lake Catherine, Lake Hamilton, and Lake Ouchita, man-made lakes located just minutes away from Hot Springs, provide scenic beauty as well as facilities for water sports and sightseeing.

The only physicians allowed to prescribe the waters of the hot springs are those licensed practitioners of the state of Arkansas who have been examined by a Federal Board of Medical Examiners appointed by the Secretary of the Interior.

There are more than 100 members of the Garland County Medical Society including specialists of wide reputation, and there are seven hospitals with 558 beds as well as the gigantic Army and Navy Hospital. Four of the hospitals have complete thermal bathing facilities and pool therapy. The newest of the institutions, the Hot Springs National Park Medical Center, treats muscle, nerve, and joint disorders. Under the supervision of a physician, this hospital is certified by the American Board of Physical Medicine and Rehabilitation and is under Federal Government recognition and regulation.

Main street in Hot Springs showing bathhouse row. On the extreme left is the Medical Center, with the Arlington Hotel shown next to it. The large building on the right is the Army and Navy Hospital.

Of Special Interest

DEATH RATE IN U.S. INCREASED IN 1958

In 1958, for the second year in a row, the general death rate for the United States was higher than in 1956. The rise was due largely to widespread outbreaks of respiratory disease in the early months of 1958 which followed the epidemic of Asian influenza in the closing months of 1957. The increase, however, was quite moderate. The estimated death rate for 1958 is 9.6 per 1,000 population—the same as in 1957—which is only 0.2 per thousand above that for 1956 and 0.4 per thousand above the record low of 9.2 established in 1954. For 11 years in succession the mortality rate in the United States has been below 10 per 1,000.

Childhood mortality in 1958 continued at the extremely low level of the last few years. Although measles increased in frequency nearly 60 per cent above 1957, the number of deaths was relatively small. Mortality among infants, being higher during periods of high incidence of respiratory infections, showed no improvement in 1958 over 1957, interrupting for the first time a long period of rapidly declining mortality rates.

CIVIL DEFENSE CONSIDERED AT MEETING OF MEDICAL SOCIETY REPRESENTATIVES

Stimulation, guidance, and assistance from the Federal level were listed as pressing needs in civil defense by representatives of state medical societies meeting with the AMA Committee on Civil Defense in OCDM Region I in Boston in September, 1958. Reports were given by the various states in Region I, including Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. Those who attended the meeting agreed that greater participation in medical civil defense affairs and civil defense generally is urgently needed, and that greater Federal participation would help overcome, at least to some extent, the apathy toward this problem of the public and of medical and paramedical personnel. Standing operating procedures and standardized terminology would be helpful and welcome, especially in regional planning for civil defense.

PSYCHIATRIC APPROACH TO LEGAL OFFENDERS

The Association for Psychiatric Treatment of Offenders, New York City, was founded in 1950 to stimulate interest in psychiatric treatment of offenders, to conduct research into the most effective methods of psychotherapy, and to pioneer in the development of a community plan that would provide especially trained psychotherapists for the use of the courts and other social agencies concerned with handling the offender. These aims of education, research, and service are implemented through (1) maintaining a psychotherapeutic service that works in close cooperation with the courts and social agencies; (2) training psychiatrists and other therapists who wish to gain experience in the field of antisocial behavior and educating probation and parole officers, the clergy, and the legal profession in the potentialities of modern psychiatry; (3) organizing scientific conferences, workshops, lectures, and technical discussions; (4) collecting and exchanging, nationally and internationally, information pertaining to the treatment of antisocial behavior; (5) conducting research into better methods of treating the offender, the mentality of the offender, and sociocultural factors conducive to delinquency; and (6) publishing a journal.

The Association's Referral Service includes an "intake staff" of 1 psychiatrist, 1 psychologist, and 1 social worker; a treatment staff of 13 therapists—9 psychiatrists, 3 psychologists, and 1 social worker; and 10 additional staff members—5 testing psychologists, 2 social workers, and 3 remedial instructors. Both juvenile and adult offenders are accepted for treatment, and remedial instruction is provided for some patients, as well as individual and group therapy.

Conferences on Psychiatry and Crime, a joint meeting with the American Association for the Advancement of Science and the American Society of Criminology, seminars on technique, and workshops for psychologists and social workers were sponsored by the Association in 1958. Special discussion groups and individual consultations for probation officers were arranged by the treatment staff.

Opportunities for Women in Medicine

AWARDS

Essay on Goiter. The American Goiter Association offers the $300 Van Meter prize award for 1959 for the best manuscript of original and unpublished work concerning "Goiter—Especially Its Basic Cause." The winning essay will be presented by the author, if possible, at the Fourth International Goiter Conference in London, England, July 5-9, 1960. The winner of the award will also receive consideration for the award of a travel honorarium. Competing essays may cover either clinical or research investigations, should not exceed 3,000 words, and must be presented in English. Duplicate typewritten copies, double spaced, should be sent to the Secretary, Dr. John C. McClintock, 149½ Washington Ave., Albany 10, N.Y., before Jan. 1, 1960.

COURSES

Allergy. The Post-Graduate Medical School of the New York University-Bellevue Medical Center offers three courses in the study of allergic conditions: a full-time course devoted to laboratory instruction, work in the outpatient allergy clinic, and lectures on pediatric, skin, food, mold, drug, and insect allergies, Nov. 30-Dec. 18; a full-time refresher course in allergic conditions, March 21-23, 1960; and a part-time course in management of allergies, including case demonstrations, April 8-June 3, 1960. For further information write: Associate Dean, NYU Post-Graduate Medical School, 550 First Ave., New York City 16.

Arthritis and Related Disorders. The Post-Graduate School of the New York University-Bellevue Medical Center offers the following courses in arthritis and related disorders: a full-time course for general physicians, Nov. 9-13 and May 16-20, 1960, stressing basic knowledge of this field and clinic and bedside teaching; and a full-time course for the experienced clinician and research worker, March 14-18, 1960, stressing newer concepts of etiology, research techniques and tools, and a detailed summary of recent advances in basic knowledge of arthritis. For further information write: Associate Dean, NYU-Post-Graduate Medical School, 550 First Ave., New York City 16.

Cardiology. The Post-Graduate Medical School of the New York University-Bellevue Medical Center offers two courses in cardiology: Practical Fundamentals of Clinical Electrocardiographic Interpretation, part time, Nov. 4, 1959-March 16, 1960; and Electrocardiography, full time, Nov. 9-14. For further information write: Associate Dean, NYU Post-Graduate Medical School, 550 First Ave., New York City 16.

Internal Medicine and Cardiology. Two postgraduate courses will be presented by the American College of Physicians: Science of Internal Medicine, Nov. 2-6, at State University of New York Upstate Medical Center, Syracuse; and Clinical Cardiology, Nov. 30-Dec. 4, at Tulane University School of Medicine, New Orleans. Further information may be obtained from the American College of Physicians, 4200 Pine St., Philadelphia 4.

Ophthalmology. The Post-Graduate Medical School of the New York University-Bellevue Medical Center offers the following courses in ophthalmology: Ophthalmic Plastic Surgery (for specialists), part time, Nov. 16-20, with special emphasis on the more common fundamental procedures peculiar to lid surgery; Surgery of the Cornea, full time, Nov. 30-Dec. 4, which will provide an opportunity to perform surgical procedures on animal eyes; and Neuro-Ophthalmology, part time, Jan. 18-Jan. 22, 1960, which will consist of a review of the anatomy of nerve fibers, instrumental and noninstrumental perimetry, classification and significance of field defects, oculomotor and optic atrophy, chiasmal syndromes, and pupillary reactions. For further information write: Associate Dean, NYU Post-Graduate Medical School, 550 First Ave., New York City 16.

Surgery. The U.S. Section, International College of Surgeons, in co-operation with the Cook County Hospital Graduate School of Medicine, offers a two week postgraduate course in general surgery beginning Nov. 2. Surgical technique and complications and management of the surgical patient will be covered, as well as an intensive review of the basic sciences in relation to clinical surgery. Participants will be given formal (Category 1) credit by the American Academy of Gen-

eral Practice. Applications should be addressed to Mr. John W. Neal, Registrar, Cook County Graduate School of Medicine, 707 S. Wood St., Chicago 12, or to Dr. Ross T. McIntire, Executive Director, International College of Surgeons, 1516 Lake Shore Drive, Chicago 10.

EXAMINATIONS

The American Medical Qualification Examination for certification of graduates of foreign medical schools who are serving as interns or residents in U. S. hospitals will be given on March 16, 1960. Photostats of credentials, applications, and appointment request forms must be received by Dr. Dean F. Smiley, Educational Council for Foreign Medical Graduates, Orrington Hotel, 1710 Orrington Ave., Evanston, Ill., by Dec. 16.

FELLOWSHIPS AND GRANTS

Pediatrics. Twenty fellowships, totaling $2,400 yearly for two years, will be awarded by Wyeth Laboratories to interns desiring training in pediatrics. Applications must be received by Nov. 30.; fellowships will begin July 1, 1960. For further information contact Dr. Philip S. Barba, Associate Professor of Pediatrics, School of Medicine, University of Pennsylvania, Philadelphia 4.

Tuberculosis. The James Alexander Miller fellowship, carrying a stipend of from $7,000 to $10,000, is being offered by the New York Tuberculosis and Health Association to a qualified investigator to allow him to do research in a field of interest to the Association. Stipends of smaller amounts, with priority given to New York City applicants, will be awarded to superior candidates who do not receive this fellowship. Applications for fellowships must be made by Nov. 15; forms may be obtained by writing the New York Tuberculosis and Health Association, 260 Park Ave. South, New York City 10.

Grants are also offered by the Association to established researchers whose work is related to tuberculosis problems, such work being conducted in an approved university, hospital, or other institution in the New York City area. Applications for grants-in-aid should be sent to the Association at least six months prior to the date when the contemplated project is scheduled to start.

MEETINGS

Blood Banks. The annual meeting of the American Association of Blood Banks will be held Nov. 4-7 in Chicago at the Edgewater Beach Hotel. For more detailed information write to the American Association of Blood Banks, Suite 1619, 30 N. Michigan Ave., Chicago.

Cancer. The Cancer Chemotherapy National Service Center of the U.S. Public Health Service will hold a two day conference on clinical anticancer drug research in Washington, D.C., Nov. 11-12, 1959. Dr. B. H. Morrison, III, of the Service Center staff, National Cancer Institute, Bethesda 14, Md., may be contacted for further information.

Chest. The American College of Chest Physicians will hold a meeting in Dallas, Texas, Nov. 29-30. For further information write to Mr. Murray Kornfeld, Executive Secretary of the College, 112 E. Chestnut St., Chicago 11.

Climatology. The American Clinical and Climatological Association will hold a meeting in Hot Springs, Va., Nov. 2-4. For further information write to Dr. F. Tremaint Billings, Secretary of the Association, 420 Medical Arts Bldg., Nashville, Tenn.

Clinical Research. The Central Society for Clinical Research will meet in Chicago Nov. 6-7. For further information write to Dr. Austin S. Weisberger, Secretary of the Society, 2065 Adelbert Rd., Cleveland 6.

Cytology. The Inter-Society Cytology Council will hold a meeting in Detroit Nov. 19-21. For further information write Dr. Paul A. Younge, Secretary-Treasurer of the Council, 1101 Beacon St., Brookline 46, Mass.

Electrical Techniques. The 12th Annual Conference on Electrical Techniques in Medicine and Biology will take place in Philadelphia Nov. 10-12. Its objective is to contribute to the advancement of the scientific area between medical and biological sciences and principals of electrical engineering from both applied and basic points of view. Sessions will be devoted to forms of nonionizing radiation, including their biological effects and uses in research; microwaves, infrared, ultraviolet, and ultrasound; and to subjects in the general area of medical electronics and biophysical electronics, including the uses of radiation of all wave lengths. Further infor-

mation may be obtained from Dr. Herman P. Schwan, Moore School of Electrical Engineering, University of Pennsylvania, Philadelphia.

Endocrinology. The Society for Endocrinology will hold a special general meeting in London, England, Dec. 3. For further information write to Dr. C. R. Austin, National Institute for Medical Research, Mill Hill, London, N.W. 7, England.

Gastroenterology. The Gastroenterology Research Group will hold a meeting Nov. 12-14 in Detroit. For further information write to Dr. Charles F. Code, Mayo Clinic, Rochester, Minn.

General Practice. The Michigan Academy of General Practice will hold their 13th Annual Fall Postgraduate Clinic in Detroit Nov. 11-12. For further information write to Dr. F. P. Rhoades, Convention Manager, 970 Maccabees Bldg., Detroit.

Gerontology. The Gerontological Society, Inc., will meet Nov. 12-14 in Detroit. For further information write to Mrs. Marjorie Adler, Administrative Secretary of the Society, 660 S. Kingshighway Blvd., St. Louis 10.

Interstate Postgraduate Medical Association of North America. The Association will meet in Chicago from Nov. 2 through Nov. 5. For further information write to Mr. Roy T. Ragatz, Executive Secretary of the Association, Box 1109, Madison 1, Wis.

Medical Education. The Association of American Medical Colleges will hold a meeting in Chicago Nov. 2-4. For further information write to Dr. Ward Darley, Executive Director of the Association, 2530 Ridge Ave., Evanston, Ill.

Physiology. A Physiological Society meeting will be held in London, England, Dec. 11-12. For further information write to Dr. J. A. B. Gray, Physiology Department, University College, Gower Street, London, W.C.1, England.

Psychoanalysis. The American Psychoanalytic Association will hold its semiannual fall meeting in New York City Dec. 4-6. For information and reservations write to the executive secretary, 36 W. 44th St., New York City 36.

Radiology. The Radiological Society of North America, Inc., will hold its meeting in Chicago Nov. 15-20. For further information write to Dr. Donald S. Childs, Secretary-Treasurer of the Society, 713 E. Genesee St., Syracuse 2, N.Y.

Sex. The Society for the Scientific Study of Sex will meet in New York City on Nov. 7. For further information write to Mr. Robert V. Sherwin, Executive Secretary of the Society, Suite 704, 1 E. 42nd St., New York City 17.

Southern Medical Association. The Southern Medical Association will hold its meeting Nov. 16-19 in Atlanta. For further information write to Mr. V. O. Foster, Executive Secretary of the Association, 2601 Highland Ave., Birmingham 5, Ala.

Surgery. The Association of Military Surgeons of the United States will hold a meeting in Washington, D. C., Nov. 8-11. For further information write to Lt. Col. George M. Beam, AUS, Ret., Executive Secretary of the Association, 1726 Eye St., N.W., Washington 6, D.C.

Surgery. The Western Surgical Association will meet in Colorado Springs, Colo., Nov. 19-21. For further information write to Dr. John T. Reynolds, Secretary of the Association, 612 N. Michigan Ave., Chicago 11.

Tuberculosis. In celebration of the fiftieth anniversary of the Tuberculosis Preventorium for Children at Farmingdale, N.J., the National Tuberculosis Association is holding a symposium on Thursday, Nov. 12, at 2:00 in the New York Academy of Medicine Building, 2 E. 103rd St., New York City. The symposium, designed to be of interest to both layman and professionals in the field, will be on the prevention of tuberculosis in children.

PAPERS REQUESTED

Psychosomatic Medicine. The American Psychosomatic Society invites physicians to submit titles and abstracts of papers that they would like to present at the seventeenth annual meeing in Montreal, Canada, in March, 1960. Ten to 20 minutes will be allotted for each paper. Titles and abstracts of two to three pages, submitted in nine copies, must be received by the Chairman of the Society's program committee, Dr. Eric P. Wittkower, 265 Nassau Rd., Roosevelt, N.Y., by Dec. 1.

News of Women in Medicine

Guest lecturers at Albert Einstein College of Medicine, New York City, in December, 1958, included two women physicians: Dr. Hattie Alexander, Professor of Pediatrics at the Columbia University College of Physicians and Surgeons, and Dr. Margaret H.D. Smith, Associate Professor of Pediatrics at the Bellevue Medical Center.

Dr. Zenaida Bagabaldo of the University of Manila has been an International Cooperation Administration fellow in physiology at Temple University Medical Center for the academic year 1958-1959.

Three women physicians were honored at the tenth anniversary Tiara Ball of the Spence-Chapin Adoption Service in New York City. Recipients of awards for distinguished service to children were Drs. Mary Allen Engle, pediatric cardiologist at New York Hospital-Cornell Medical Center; Barbara Maria Korsch, specialist in pediatric psychiatry and psychology on the staff of the same hospital; and Jane C. Wright, specialist in cancer research at New York University-Bellevue Medical Center. Each received a check for $500.

A fund for occupational medicine named in honor of Dr. Alice Hamilton was established at the Harvard School of Public Health on the doctor's ninetieth birthday in February. Dr. Hamilton, a pioneer in the field of industrial medicine, was an associate and friend of Jane Addams at Hull House, and it was there that she first became interested in, as she described it in the title of her autobiography, "Exploring the Dangerous Trades." Since 1919, when she was appointed to the Harvard Medical School faculty as an assistant professor, Dr. Hamilton has been on the staff, and for many years was the only female faculty member at the school. Through her work on the Health Committee of the League of Nations, she became known and respected around the world for her work and ideas in the field of industrial health.

Dr. Jane E. Hodgson of St. Paul is serving a one year term on the Board of Directors of the Minnesota Obstetrical and Gynecological Society.

Dr. Amy Louise Hunter of Madison, Wis., participated in a conference on infant deaths held by the Medical Society of Milwaukee County in January.

Upon the occasion of her retirement, Dr. Sara M. Jordan of Boston was honored by the New England Baptist Hospital, where she has worked for the past 34 years. A citation presented by the president of the Hospital expressed "heartfelt appreciation for your 34 years of devoted, competent, and loyal medical ministry and devotion." Dr. Jordan was the first woman president of the American Gastroenterology Association and chairman of the Section on Gastroenterology of the AMA. She received the Julius Friedenwald medal for outstanding achievement in her field, the first woman to be so honored; other awards included the Elizabeth Blackwell citation for achievement in medicine, the Radcliffe Alumnae Achievement award, and the Jane Addams medal for distinguished service. She was scheduled to speak at the recently held fortieth annual session of the American College of Physicians as a member of a panel discussion on "The Care and Preservation of the American Executive."

Dr. Mary H. Loveless, Chief of the Allergy Service of the National Jewish Hospital at Denver, addressed the Philadelphia Allergy Society at its annual dinner in February. Her topic was "Single Injection Repository Treatment in Inhalant Allergy."

Dr. Elizabeth Pennock Maris of Germantown, Pa., received a Heart award from the local Variety Club Woman's Auxiliary for her "constant and devoted service to humanity." Dr. Maris is director of pediatrics at Chestnut Hill Hospital and serves on the staff of Children's Hospital of Philadelphia.

Dr. Helen J. Ossofsky of the Johns Hopkins School of Medicine, Baltimore, was one of a team of seven American specialists organized by MEDICO (Medical International Cooperation) to aid and advise local medical services in UNRWA camps in Lebanon, Syria, Jordan, and the Gaza Strip. The specialists spent five weeks in the area, working with the medical personnel of the more than 950,000 Palestinian Arab refugees who, 10 years

after the Israel-Arab war, are still completely dependent on the U.N. Relief and Works Agency.

Drs. Mildred R. Passmore and Margaret B. Obenschain have joined the Department of Pediatrics of the Snyder Clinic in Winfield, Kan.

Dr. Edith Potter of Chicago spoke at a regional conference in Chicago sponsored by The National Foundation. Her topic was "General Consideration of the Problem of Congenital Malformations of the Central Nervous System Embryology, Incidence, Co-Existing Deformity, Early Diagnosis, and Natural Cause." Dr. Potter is a member of the Department of Pathology, University of Chicago Medical School, and serves on the staff of the Chicago Lying-In Hospital.

Drs. Miriam Reiner and Helen L. Cheung, District of Columbia General Hospital, have developed a method for determination of fibrinogen, which is described as "accurate, simple, and reasonably rapid."

Dr. Margaret T. Ross of the Department of Mental Health of West Virginia has been appointed state mental health research survey chairman for the state-by-state study of mental health being conducted by the Southern Regional Education Board.

Dr. Margaret C. Sturgis was awarded an honorary degree of Doctor of Humane Letters at commencement exercises of her alma mater, the Woman's College of the University of North Carolina, Greensboro.

Dr. Sarah S. Tower of Baltimore was a program participant in the fourth annual postgraduate course of the American College of Physicians.

Dr. Priscilla White of the Joslin Clinic in Boston, participated in a panel discussion at the symposium on "A New Oral Hypoglycemic Agent, Phenformin (DBI)" held in February at the Texas Medical Center, Houston. Members of the panel to which Dr. White contributed were concerned with "DBI in the Management of Diabetes Mellitus – Special Problems."

Dr. Rosalyn S. Yalow, Assistant Chief of Radioisotope Services at the Veterans Administration Hospital, Bronx, N.Y., reviewed the uses of radioisotopes in studies of thyroid function at a symposium on radioisotopes in New York City in November, 1958.

AMWA PRESENTS . . .

Dr. Suzanne Howe, an otolaryngologist in New York City, is the first woman physician to become a civilian consultant to the First Army. She says it happened this way: In July, 1958, the Army's consultant in otolaryngology was ill; New York Hospital, where Dr. Howe is assistant attending surgeon in otolaryngology, was called to send a specialist to Governor's Island to care for an officer who had broken his nose. Dr. Howe took the case and subsequently met the commanding general of the First Army, who suggested that she apply for the position of consultant. This involved filling out "innumerable forms in innumerable copies" for the surgeon general and, later, for the F.B.I., and waiting for many months until she was "cleared" as a security risk.

Dr. Howe says the job will probably take "relatively little" professional time; however, as First Army headquarters has no nose-and-throat staff, the position is far from an honorary sinecure. In addition to her work at New York Hospital, Dr. Howe teaches otolaryngology in the Department of Surgery at Cornell Medical College, from which she received her M.D. degree in 1940. Her professional status is indicated by her fellowship in the American Academy of Ophthalmology and Otolaryngology and by her inclusion in the first edition of *Who's Who of American Women*. Nonprofessional activities include membership in golf and beach clubs and an interest in the New York theater.

Books Received

The following books have been received for review and are acknowledged in this column. More detailed reviews will be published on books of most interest to our readers and as space permits.

CHLOROMYCETIN (CHLORAMPHENICOL). By Theodore E. Woodward, M.D., and Charles L. Wisseman, Jr., M.D., of the University of Maryland School of Medicine, Baltimore; with four collaborators. Pp. 159, with 19 figures and 13 tables. Price $4.00 (cloth). Medical Encyclopedia, Inc., New York, 1958.

A DOCTOR SPEAKS HIS MIND. By Roger I. Lee, M.D., formerly President of the American College of Physicians, Professor of Hygiene at Harvard Medical School, Boston, and Acting Dean of the Harvard School of Public Health; member, American Geriatrics Association, Association of American Physicians, Gerontological Society, and National Epilepsy League. Pp. 120. Price $3.00. Little, Brown and Company, Boston, 1958.

FAMILY GUIDE TO TEENAGE HEALTH. By Edward T. Wilkes, M.D., Associate Clinical Professor of Pediatrics, New York University Medical College, and Associate Attending Pediatrist, The University Hospital, New York City. Pp. 244. Price $4.00. The Ronald Press Company, New York, 1958.

GENETIC CONCEPT FOR THE ORIGIN OF CANCER. Vol. 71, Art. 6, Annals of the New York Academy of Sciences. Editor in Chief, Otto V. St. Whitelock; Consulting Editor, Leonell C. Strong. Pp. 434, with figures and tables. Price $5.00 (paper). The Academy, New York, 1958.

HISTORY OF NEUROLOGY. MD Monographs on Medical History, No. 2. By Walther Riese, M.D., Assistant Professor of Clinical Neurology and Psychiatry, and Chairman of the Department and Associate Professor of the History of Medicine, Medical College of Virginia, Richmond. Pp. 223. Price $4.00. MD Publications, Inc., New York, 1959.

HISTORY OF OPHTHALMOLOGY. MD Monographs on Medical History, No. 3. By George E. Arrington, Jr., M.D., Associate in Ophthalmology, Medical College of Virginia, Richmond; Attending Ophthalmologist, Medical College of Virginia Hospital, Richmond Eye Hospital, Retreat for the Sick Hospital, and Richmond Memorial Hospital. Pp. 174. Price $4.00. MD Publications, Inc., New York, 1959.

HODGKIN'S DISEASE. Vol. 73, Art. 1, Annals of the New York Academy of Sciences. Editor in Chief, Otto V. St. Whitelock; Consulting Editor, Antonio Rottino. Pp. 380, with figures and tables. Price $4.50 (paper). The Academy, New York, 1958.

INTERNATIONAL STANDARDS FOR DRINKING WATER. Pp. 152. Price $4.00 (cloth). World Health Organization, Geneva, Switzerland, 1958. U.S. distributor, Columbia University Press, New York.

MARRIAGE ANALYSIS: Foundations for Successful Family Life. By Harold T. Christensen, Head of the Department of Sociology and Professor of Sociology and Family Life, Purdue University, Lafayette, Ind. Second Edition. Pp. 645, with 13 figures and 2 tables. Price $5.50 (cloth). The Ronald Press Company, New York, 1958.

MATERNITY: A Guide to Prospective Motherhood. By Frederick W. Goodrich, Jr., M.D. Pp. 130, with figures and charts. Price $1.75. Prentice-Hall, Inc., Englewood Cliffs, N.J., 1959.

MEDICAL EDUCATION: Annotated Bibliography, 1946-1955. Pp. 391. Price $6.75 (cloth). World Health Organization, Geneva, Switzerland, 1958.

OUTLINE OF FRACTURES (INCLUDING JOINT INJURIES). By John Crawford Adams, M.D., F.R.C.S., Consultant Orthopaedic Surgeon, St. Mary's Hospital, London, and St. Vincent's Orthopaedic Hospital, Pinner, England; Assistant Editor, *Journal of Bone and Joint Surgery*. Second Edition. Pp. 268, with 237 figures. Price $6.50 (cloth). E. & S. Livingstone, Ltd., Edinburgh and London, 1958. U.S. distributor, The Williams and Wilkins Company, Baltimore.

PREGNANCY, BIRTH AND ABORTION. By Paul H. Gebhard, Wardell B. Pomeroy, Clyde E. Martin, and Cornelia V. Christenson, of the Institute for Sex Research, Inc., Indiana University, Bloomington. Pp. 282, with 75 tables. Price $6.00. Paul B. Hoeber, Inc., Medical Books, New York, 1958.

PRINCIPLES OF ADMINISTRATION APPLIED TO NURSING SERVICE. By H. A. Goddard, Goddard & Company, Management Consultants, London, England; Chairman, Nurses and Midwives Whitley Council of Great Britain. World Health Organization Monograph Series, No. 41. Pp. 106. Price $4.00 (cloth). World Health Organization, Geneva, Switzerland, 1958. U.S. distributors, Columbia University Press, International Documents Service, New York.

REMEDIES AND RACKETS: The Truth About Patent Medicines Today. By James Cook. Pp. 252. Price $3.75. W. W. Norton & Company, Inc., New York, 1958.

SON OR DAUGHTER BY CHOICE. By August J. von Borosini, Sc.D. Pp. 120. Price $6.00. E. F. Steinmetz, Amsterdam, the Netherlands, 1958.

STUDIES ON FERTILITY, 1958. Vol. X, Proceedings of the Society for the Study of Fertility, London. Edited by R. G. Harrison, D.M., Derby Professor of Anatomy, University of Liverpool, England. Pp. 176, with figures and tables. Price $5.50. Charles C Thomas, Publisher, Springfield, Ill., 1959.

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1. Mintz, A. A: Management of the Febrile Child, J. Ky. Acad. Gen. Pract. 5:26 (Jan.) 1959.

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NIAMID has been found to be strikingly effective and well tolerated in a broad range of depressive states including a wide variety of the milder depressive syndromes, as well as the masked depression so frequently seen in general practice. These syndromes include: depression associated with the menopause, postoperative depressive states and senile depression; depression accompanying chronic or incurable illness, such as gastrointestinal and cardiovascular disorders and inoperable cancer.

in angina pectoris

NIAMID, in intensive clinical tests, has proved to have a high degree of safety and to be a valuable adjunct in the management of the anginal syndrome. NIAMID produces striking symptomatic improvement in angina patients—markedly reduces the pain, severity and frequency of anginal episodes, reduces nitroglycerin requirements, and provides an increased sense of well-being. Since dramatic improvement is seen in some patients, it is wise to advise the patient against overexertion—his disorder still holds potential dangers despite relief of symptoms.

DOSAGE: Start with 75 mg. daily in single or divided doses. After a week or more, adjust the dosage, depending upon patient response, in steps of one or one-half 25 mg. tablet. Once improvement is seen, gradually reduce dosage to the maintenance level. Many patients respond to NIAMID within a few days, others in 7 to 14 days. A few patients may require as much as 200 mg. daily over a longer period of time before significant improvement is seen.

PRECAUTIONS: Side effects are infrequent and mild, and often lessened or eliminated by a reduction in dosage. Hypotensive effects have rarely been noted and no jaundice or other evidence of liver damage has been reported in patients receiving NIAMID. However, in patients with a history of liver disease, the possibility of hepatic reactions should be kept in mind.

SUPPLY: NIAMID is available as 25 mg. (pink) and 100 mg. (orange) scored tablets.

Already clinically proved in several thousand patients—

Complete references and a Professional Information Booklet giving detailed information on NIAMID are available on request.

Pfizer *Science for the world's well-being*

*Trademark for brand of nialamide

PFIZER LABORATORIES, Division, Chas. Pfizer & Co., Inc., Brooklyn 6, New York

faster recovery, greater comfort for your OB-GYN patients

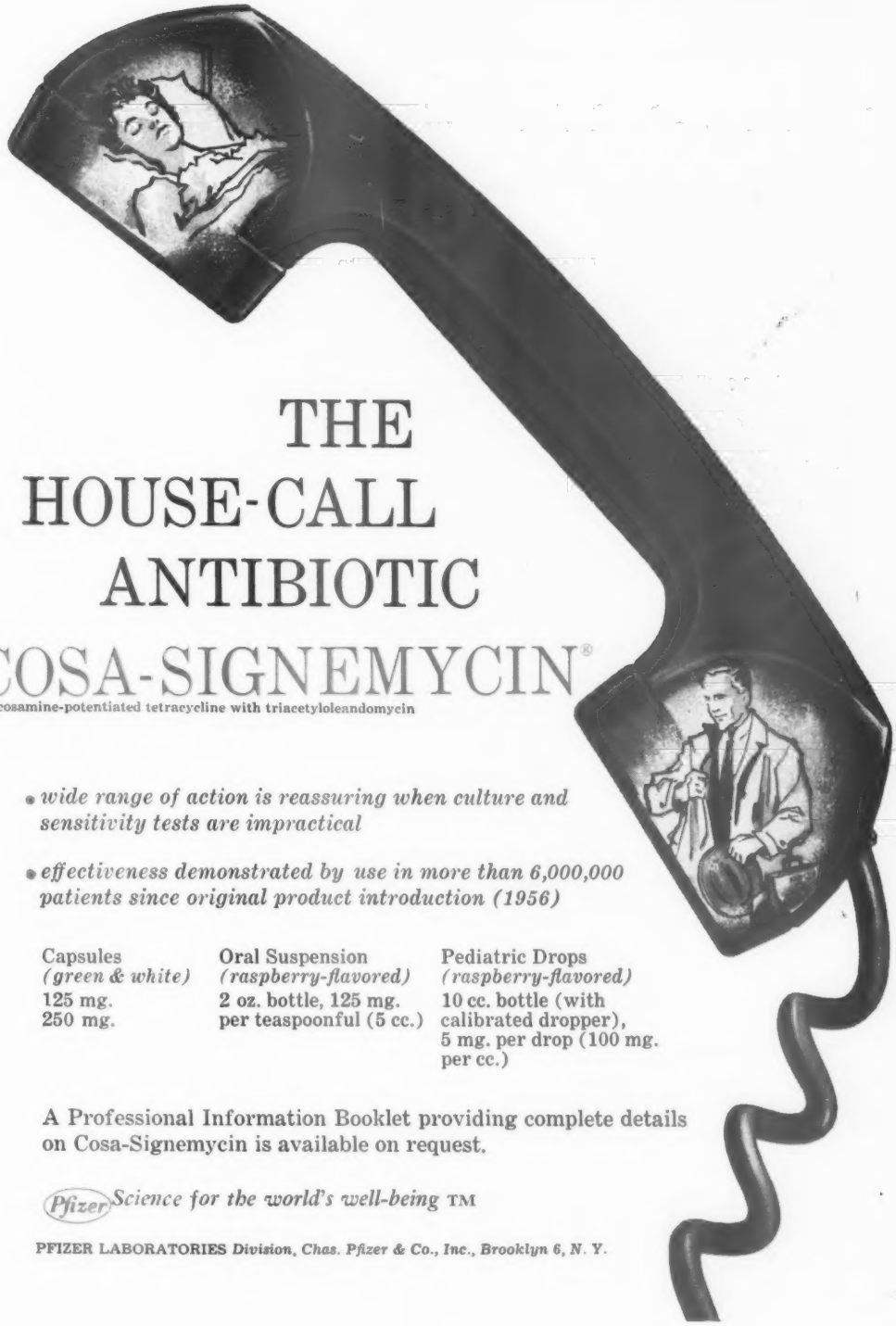
Administered before and after cervicovaginal surgery, irradiation, delivery, and office procedures such as cauterization, FURACIN CREAM promptly controls infection; reduces discharge, irritation and malodor; hastens healing. FURACIN CREAM is active in the presence of exudates, yet is nontoxic to regenerating tissue, does not induce significant bacterial resistance nor encourage monilial overgrowth.

FURACIN® CREAM

BRAND OF NITROFURAZONE

FURACIN 0.2% in a fine cream base, water-miscible and self-emulsifying in body fluids. Tubes of 3 oz., with plastic plunger-type vaginal applicator. Also available: FURACIN Vaginal Suppositories.

THE NITROFURANS—a *unique* class of antimicrobials
EATON LABORATORIES, NORWICH, NEW YORK



THE HOUSE-CALL ANTIBIOTIC

COSA-SIGNEMYCIN®

glucosamine-potentiated tetracycline with triacetyloleandomycin

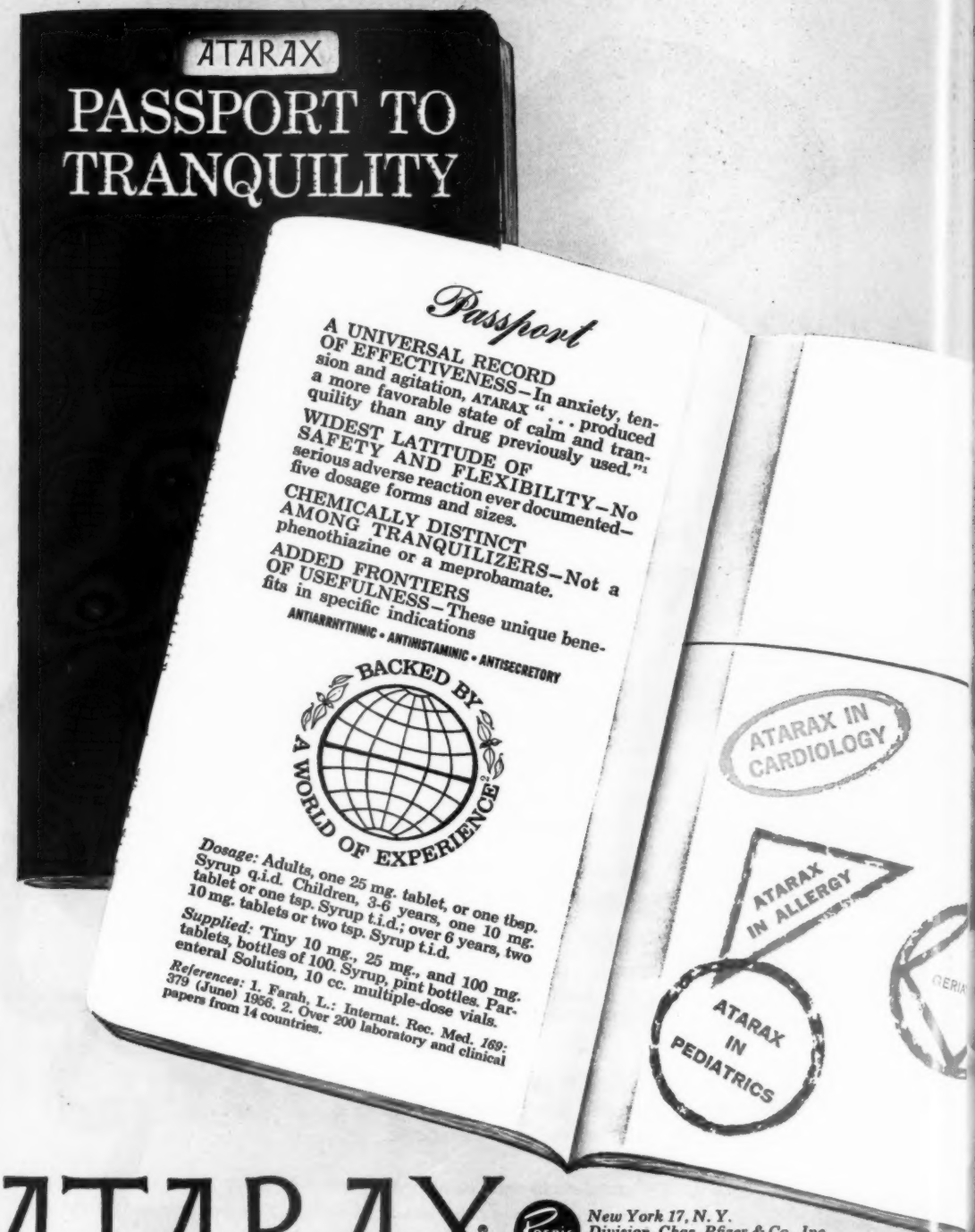
- *wide range of action is reassuring when culture and sensitivity tests are impractical*
- *effectiveness demonstrated by use in more than 6,000,000 patients since original product introduction (1956)*

Capsules *(green & white)*	Oral Suspension *(raspberry-flavored)*	Pediatric Drops *(raspberry-flavored)*
125 mg. 250 mg.	2 oz. bottle, 125 mg. per teaspoonful (5 cc.)	10 cc. bottle (with calibrated dropper), 5 mg. per drop (100 mg. per cc.)

A Professional Information Booklet providing complete details on Cosa-Signemycin is available on request.

Pfizer *Science for the world's well-being* TM

PFIZER LABORATORIES *Division, Chas. Pfizer & Co., Inc., Brooklyn 6, N. Y.*


ATARAX
PASSPORT TO TRANQUILITY
Passport
A UNIVERSAL RECORD OF EFFECTIVENESS—In anxiety, tension and agitation, ATARAX "... produced a more favorable state of calm and tranquility than any drug previously used."[1]
WIDEST LATITUDE OF SAFETY AND FLEXIBILITY—No serious adverse reaction ever documented—five dosage forms and sizes.
CHEMICALLY DISTINCT AMONG TRANQUILIZERS—Not a phenothiazine or a meprobamate.
ADDED FRONTIERS OF USEFULNESS—These unique benefits in specific indications
ANTIARRHYTHMIC • ANTIHISTAMINIC • ANTISECRETORY
BACKED BY A WORLD OF EXPERIENCE
Dosage: Adults, one 25 mg. tablet, or one tbsp. Syrup q.i.d. Children, 3-6 years, one 10 mg. tablet or one tsp. Syrup t.i.d.; over 6 years, two 10 mg. tablets or two tsp. Syrup t.i.d.
Supplied: Tiny 10 mg., 25 mg., and 100 mg. tablets, bottles of 100. Syrup, pint bottles. Parenteral Solution, 10 cc. multiple-dose vials.
References: 1. Farah, L.: Internat. Rec. Med. 169: 379 (June) 1956. 2. Over 200 laboratory and clinical papers from 14 countries.
ATARAX IN CARDIOLOGY
ATARAX IN ALLERGY
ATARAX IN PEDIATRICS

ATARAX®

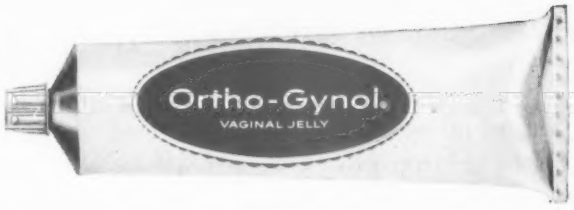
(brand of hydroxyzine)

Rx

New York 17, N. Y.
Division, Chas. Pfizer & Co., Inc.
Science for the World's Well-Being

while they are planning
their family

**they need your help
more than ever**



the most widely prescribed contraceptive

WHENEVER A DIAPHRAGM IS INDICATED

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You can expect your patients with dysmenorrhea to return to normal activity when you prescribe

THE FIRST TRUE "TRANQUILAXANT"

Trancopal®

case profile no. 3347* *A 35-year-old housewife had a history of severe dysmenorrhea and premenstrual tension:* Menarche, age 14; gravida II, Para I; menstrual cycle, fairly regular; pelvic examination, essentially negative results. The patient suffered from severe tension and irritability for from two to seven days before and during menstruation. Cramps were experienced during all three days of the menstrual periods. The analgesics provided limited symptomatic relief.

Trancopal, 200 mg. t.i.d., was prescribed for the dysmenorrhea. Result: Relief of severe cramping and accompanying irritability. *Because of these excellent results Trancopal was prescribed for premenstrual tension.* Result: Excellent response. This patient has remained on the above regimen for more than six months and no adverse effects have been noted.

Indications— Musculoskeletal: Low back pain (lumbago, sacroiliac pain, etc.); neck pain (torticollis); bursitis; rheumatoid arthritis; osteoarthritis; disc syndrome; fibrositis; ankle sprain; tennis elbow; myositis; postoperative muscle spasm. Psychogenic: Anxiety and tension states; dysmenorrhea; premenstrual tension; asthma; angina pectoris; alcoholism.

Dosage: 100 or 200 mg. orally three or four times daily. Relief of symptoms occurs in fifteen to thirty minutes and lasts from four to six hours.

How Supplied: Now available in two strengths. Trancopal Caplets®, 100 mg. (peach colored, scored), bottles of 100. New Strength—Trancopal Caplets, 200 mg. (green colored, scored), bottles of 100.

Winthrop LABORATORIES
NEW YORK 18, N.Y.

*Clinical Report on file at the Department of Medical Research, Winthrop Laboratories.

Trancopal (brand of chlormezanone) and Caplets, trademarks reg. U.S. Pat. Off. 1406M

PARTICULARLY for the "OB" patient who requires antibiotic therapy

COSA-TETRASTATIN®

glucosamine-potentiated tetracycline with nystatin

Because women during pregnancy are particularly prone to secondary fungal infection, they benefit from the extra protection of nystatin.

Cosa-Tetracyn® (glucosamine-potentiated tetracycline) provides peak levels of antibiotic activity against a broad range of susceptible organisms.

Nystatin provides specific protection against overgrowth of Candida albicans.

COSA-TETRASTATIN *provides tetracycline effectiveness with minimum risk of moniliasis.*

Supplied:

Capsules	Oral Suspension
(pink & black)	*(orange-pineapple flavor)*
250 mg. Cosa-Tetracyn plus 250,000 u. nystatin	2 oz. bottle, each tsp. (5 cc.) contains 125 mg. Cosa-Tetracyn plus 125,000 u. nystatin

A Professional Information Booklet providing complete details on Cosa-Tetrastatin is available on request.

Pfizer Science for the world's well-being™

PFIZER LABORATORIES
Division, Chas. Pfizer & Co., Inc.
Brooklyn 6, N. Y.

Doctors' Dilemma, 1959

the challenge of chronicity in genitourinary tract infections

"Aside from the disturbing increase in emergence of antibiotic resistant bacterial strains, perhaps the most challenging dilemma confronting thoughtful physicians today is the problem of chronic infection of the genitourinary tract."[1]

to control the chronic case

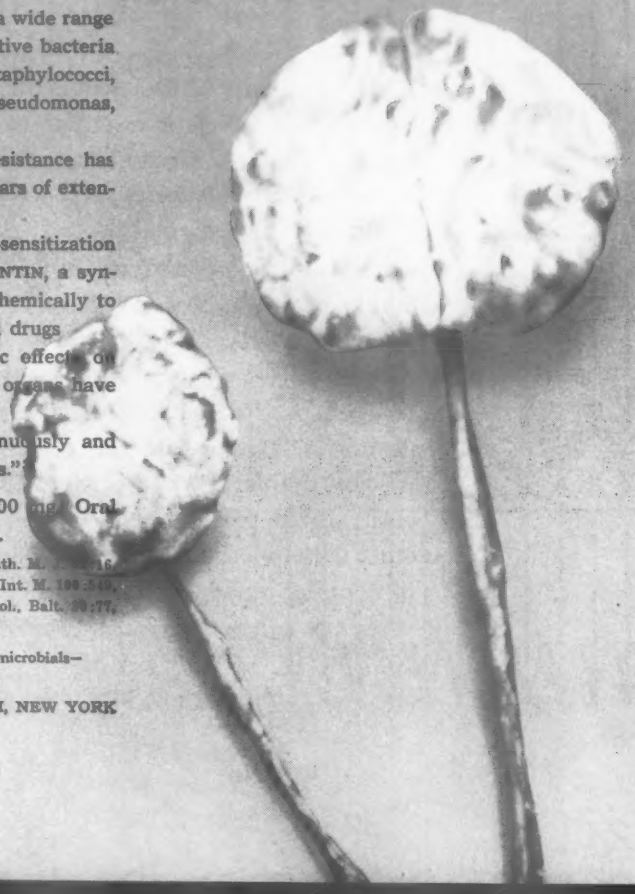
FURADANTIN®

brand of nitrofurantoin

"may be used for protracted periods for the suppression of infection in the urinary tract, even in the presence of probable obstruction."[2]

- Rapidly bactericidal against a wide range of gram-positive and gram-negative bacteria including organisms such as staphylococci, Proteus and certain strains of Pseudomonas, resistant to other agents
- Development of bacterial resistance has not been a problem in over 7 years of extensive clinical use
- No cross-resistance or cross-sensitization with other drugs since FURADANTIN, a synthetic nitrofuran, is unrelated chemically to any other class of antimicrobial drugs
- Excellent tolerance—no toxic effects on kidneys, liver or blood-forming organs have ever been reported
- "The drug was given continuously and safely for as long as three years."[3]

Available as Tablets, 50 and 100 mg. Oral Suspension, 25 mg. per 5 cc. tsp.



References: 1. Lipscomb, H., et al.: South. M. [illegible] 16, 1959. 2. Jawetz, E., et al.: A.M.A. Arch. Int. M. 100:549, 1957. 3. Lippman, R. W., et al.: J. Urol., Balt. 80:77, 1958.

NITROFURANS—a *unique* class of antimicrobials—neither antibiotics nor sulfonamides

EATON LABORATORIES, NORWICH, NEW YORK

when pregnancy is contraindicated...

Lorophyn®

SUPPOSITORIES

Their simplicity of use assures the high degree of patient cooperation which is essential to any program of conception control. Greaseless, odorless and deodorizing, LOROPHYN Suppositories melt within 15 minutes to form a tenacious spermicidal barrier which has proved highly efficacious in clinical studies.*

Stable in any climate, LOROPHYN Suppositories contain phenylmercuric acetate 0.02%, methylbenzethonium chloride (an effective deodorant) 0.2% and methylparaben in a water-dispersible base. Box of 12 hermetically sealed suppositories, 2 Gm. each.

Also available: LOROPHYN Jelly containing phenylmercuric acetate 0.05%, polyethylene glycol of mono-iso-octyl ether 0.3%, methylparaben 0.05% and sodium borate 3% in a special jelly base. Tube of 3¼ oz.

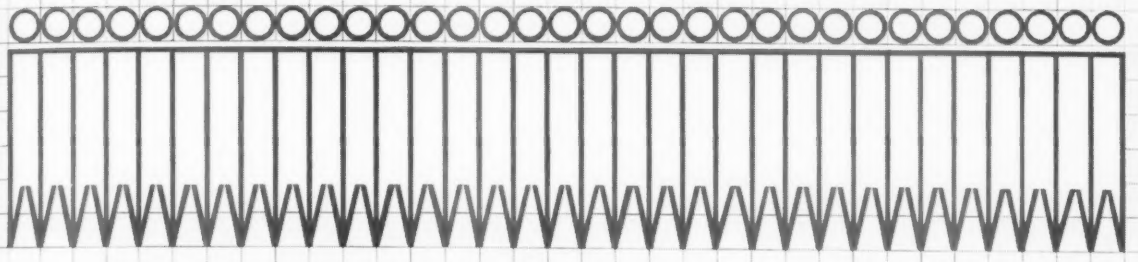
*Eastman, N. J., Seibels, R. E.: J. Am. M. Ass. **139**:16, 1949. Eastman, N. J.: South. M. J. **42**:346, 1949.

EATON LABORATORIES, NORWICH, NEW YORK

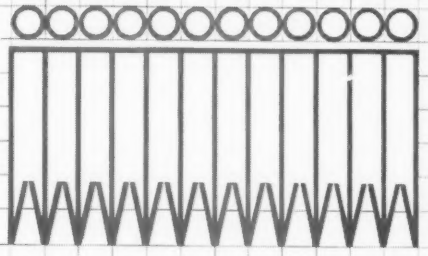
Decadron®

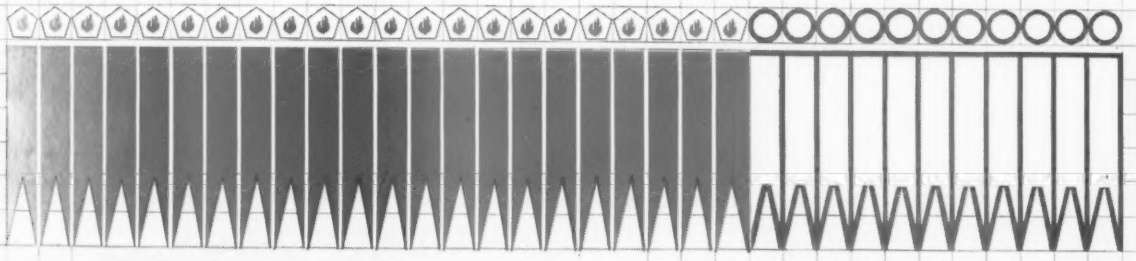
DEXAMETHASONE

treats more patients more effectively...



Of 45 arthritic patients
who were refractory
to other corticosteroids*





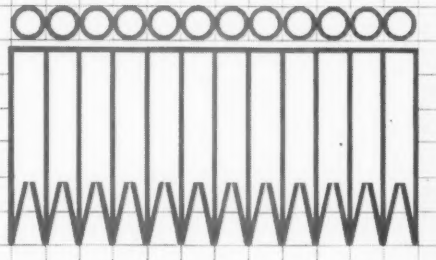
22 were successfully
treated with **Decadron**[1,2]

1. Boland, E. W., and Headley, N. E.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.
2. Bunim, J. J., et al.: Paper read before the Am. Rheum. Assoc., San Francisco, Calif., June 21, 1958.

*Cortisone, prednisone and prednisolone.

DECADRON is a trademark of Merck & Co., Inc.

Additional information on DECADRON is available to physicians on request.



MSD Merck Sharp & Dohme
DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

meet her greater needs for diet supplementation

...specify **Natalins® Comprehensive** / **Natalins® Basic**
Vitamins and minerals, Mead Johnson *Vitamins and minerals, Mead Johnson*

both extra-generous in iron, ascorbic acid and calcium

A study[1] of 461 infants, age 3 months to 1½ years, has shown a 26% greater incidence of anemia in second, third, and later children than in first-born children. "A plausible explanation . . . was that the successive siblings suffered increasingly severe iron deficiency because the mother's iron stores were depleted by successive pregnancies."

1. Guest, G. M., and Brown, E. W.: A.M.A. Am. J. Dis. Child. 93: 486 (May) 1957.

Natalins Comprehensive tablets supply 12 vitamins and minerals, and Natalins Basic tablets supply 4 vitamins and minerals. Both are formulated to meet the special needs of multiparas by supplying generous amounts of elemental iron (40 mg. per tablet), ascorbic acid (100 mg. per tablet) and calcium (250 mg. per tablet).

Convenient one-a-day tablet dosage.
Both formulations phosphorus-free.

Mead Johnson
Symbol of service in medicine

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